USER GUIDE

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1 GETTING STARTED

1.1 Introduction to Cameo Business Modeler

Cameo Business Modeler is a tool that provides a solution for modeling and analyzing business processes. This product allows you to represent and analyze business processes by using the Business Process Modeling and Notation (BPMN) standard.

The Business Process Modeling and Notation (BPMN) standard provides the capability of understanding internal business procedures in a graphical notation and enables organizations to communicate these procedures in a standard manner. Furthermore, the graphical notation facilitates the understanding of performance collaborations and business transactions between organizations. This ensures that businesses will understand themselves and the participants in their business.

Cameo Business Modeler for MagicDraw provides support for BPMN 2.0 profile, diagrams, user perspective, usability features for BPMN modeling, and BPMN model validation. It also includes reports, manual, samples, and import from BPMN 1.1 models that were created with MagicDraw.

The following three BPMN 2.0 diagrams are supported:

(i) BPMN Process Diagram

(ii) BPMN Collaboration Diagram

(iii) BPMN Choreography Diagram

The “Getting Started” chapter contains the following sections:

1.2 Installation

1.2.1 Installing Cameo Business Modeler Plugin

To install Cameo Business Modeler Plugin, either (i) use Resource/Plugin Manager in MagicDraw to download and install the plugin, or (ii) follow the manual installation instructions if for some reasons direct download through Resource/Plugin Manager is not available or if you have already downloaded the plugin.

(i) To install Cameo Business Modeler Plugin using Resource/Plugin Manager:

1. On the **Help** menu, click **Resource/Plugin Manager**. The **Resource/Plugin Manager** dialog will open and prompt you to check for the latest product updates and resources. Click **Check for Updates** > **Check**.

NOTE	To start the MagicDraw resource updates, specify HTTP Proxy Settings for connection.

2. Select the **Cameo Business Modeler Plugin** check box and click **Download/Install**.
3. Restart MagicDraw.

(ii) To install Cameo Business Modeler Plugin following the manual installation instructions on all platforms:

1. Download the **Cameo_Business_Modeler_Plugin_<version number>.zip** file.

NOTE	Exit the currently running MagicDraw application before extracting the plugin.

2. Extract the file to the directory where your MagicDraw is installed.
3. Start MagicDraw.

IMPORTANT!	When you install the plugin, you will automatically get an evaluation key, which is valid for seven (7) days. Afterward, you will need to purchase a license for the plugin to work on BPMN diagrams (once the evaluation license has expired, BPMN diagrams will be in read-only mode).

Related sections

"MagicDraw UserManual.pdf"

1.3 Switching to Business Modeler Perspective

The Business Modeler perspective is geared to business process modelers. The perspective simplifies user interface by hiding features that are relevant to business process modeling, and highlighting all of the features dedicated to business process modeling.

What you need to do to access the Business Modeler perspective depends on whether you are doing either one of the following:

(i) Launching MagicDraw once Cameo Business Modeler has been installed.

(ii) Switching to the Business Modeler perspective from any other perspectives.

(i) To switch to the Business Modeler perspective once Cameo Business Modeler has been installed:

1. Start MagicDraw.
2. A message dialog will open, informing you of successful installation and asking whether you want to switch to the Business Modeler perspective.
3. Click **Yes** to switch to the Business Modeler perspective supporting BPMN 2.0 diagrams.

(ii) To switch to the Business Modeler perspective from any other perspectives:

1. On the **Options** menu, click **Perspectives** > **Perspectives**. The **Select Perspectives** dialog will open.
2. Select **Cameo Business Modeler** and click **Apply**.

Related sections

Perspectives Selection and Customization in the "Getting Started" section in the MagicDraw user guide.

Working with BPMN 2.0 Projects

1.4 Working with BPMN 2.0 Projects

A BPMN2 project provides a workspace for business process modeling. The Business Process Modeling and Notation (BPMN) elements and validation rules are available in this project.

To create a new workspace for an empty project:

1. Do one of the following:
   - On the **File** menu, click **New Project**.
   - Click the **New Project** button on the main toolbar.
   - Press Ctrl + N.
2. In the **New Project** dialog, click the **BPMN2 Project** icon 

3. Type the filename in the **Name** box.
4. Click the "**...**" button to locate where to store your newly-created project.
5. Click **OK**.

NOTE	If the Business Modeler perspective is not enabled, a message will open and ask whether you want to change the perspective. Click **Yes** to switch to the Business Modeler perspective supporting BPMN2 diagrams.

Related sections

- Switching to Business Modeler Perspective
- The 'Working with Projects' section in the MagicDraw User Manual.

2 CONCEPTS

A Business Process Modeling and Notation (BPMN) standard provides the capability to understand internal business procedures in a graphical notation and gives organizations the ability to communicate these procedures in a standard manner. Furthermore, the graphical notation facilitates the understanding of the performance collaborations and business transactions between organizations. This will ensure the organizations to understand themselves and participants in the business.

The BPMN 2.0 standard consists of the following three major parts:

(i) Process: shows business processes, events, and messages.

(ii) Collaboration: shows how a process is implemented between collaborators and displays details of the conversations between participants.

(iii) Choreography: provides a view of the messages/information flows between participants.

Cameo Business Modeler for MagicDraw provides support for BPMN 2.0 profile, diagrams, user perspective, usability features for business process modeling, samples, user guide, and import from BPMN 1.1 models that have been created with MagicDraw.

Cameo Business Modeler supports all three BPMN 2.0 diagrams:

(i) Process diagram: shows business processes, events, and messages.

(ii) Collaboration diagram: shows how a process is implemented between collaborators and defines the conversations between participants in detail.

(iii) Choreography diagram: shows a flowchart view of the messages/information between participants.

The “Concepts” chapter contains the following sections:

2.1 Common BPMN 2.0 Elements

The following section will define the BPMN elements that can be used in more than one type of BPMN diagrams, for example, Process, Collaboration, Conversation, and Choreography diagrams.

2.1.1 Definitions

The Definitions element is a root model in a BPMN project. This element is the outermost containing object for all BPMN elements (Figure 1). It defines the scope of visibility and the namespace for all of the BPMN elements in the model.

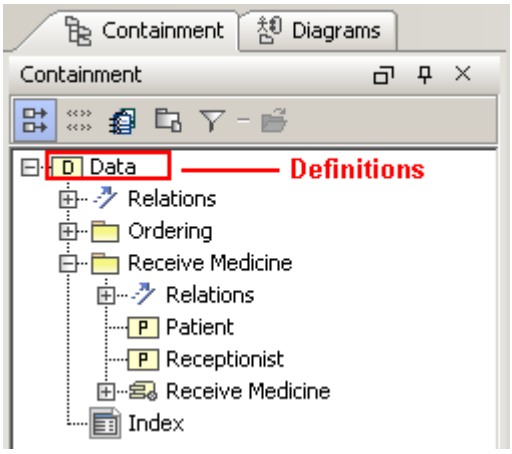


Figure 1 -- Definitions Element in Containment Tree

2.1.2 Artifacts

Artifacts provide modelers with the capability of showing additional information about a process. This information is not directly related to the sequence or message flow of the process.

2.1.2.1 Anchor

Element	Stereotype	Icon
Anchor	n/a	

An Anchor is used to associate a Text Annotation, Note, or Comment with other diagram elements (Figure 2).

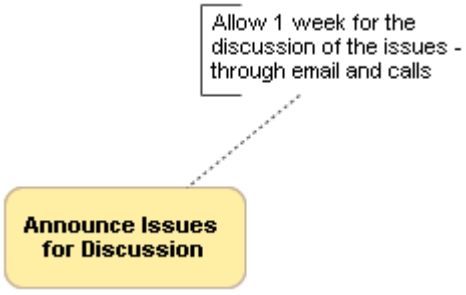


Figure 2 -- Text Annotiation Associates Anchor with Note

Related concepts

Text Annotation

2.1.2.2 Association

Element	Stereotype	Icon
Association	«Association» [Dependency]	

An **Association** is used to show the Activity used for a compensation (Figure 3).

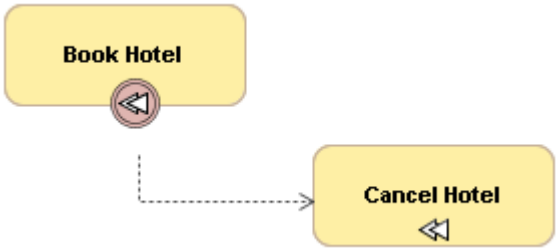


Figure 3 -- Association Drawn from Compensation Boundary Event to Compensation Task

Related concepts

BPMN Process

Compensation

2.1.2.3 Group

Element	Stereotype	Icon
Group	n/a	

A Group element represents an informal visual grouping of the graphical elements of a diagram. A group shows elements that belong to the same category. This type of grouping does not affect the sequence flow within the Group. The category name appears on the diagram as the Group label (Figure 4).

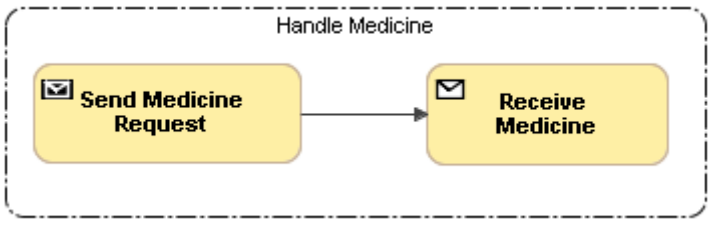


Figure 4 -- Group

2.1.2.4 Text Annotation

Element	Stereotype	Icon
Text Annotiation	«TextAnnotation» [Comment]	

A Text Annotation is used to provide additional information to the reader of a BPMN diagram. A Text annotation connects to a model element using an anchor (Figure 5).

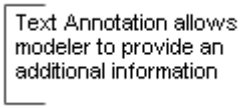


Figure 5 -- Text Annotation

Related concepts

Anchor

2.1.3 Events

Events in business process modeling show what happens while a process is being performed. Events affect the flow of a process and usually have a cause or impact, and generally require or allow for a reaction. The term “event” is general enough to cover many things in a process, for example, the start or end of an activity, the change of a state of a document, and a message that arrives.

There are three main types of events:

2.1.3.1 Start Events define where a process starts.

2.1.3.2 Intermediate Events indicate that something is happening between the start and end of a process. An Intermediate event, which can be placed on the boundary of an activity, is called a Boundary Event.

2.1.3.3 Boundary Events indicate where the path of a process ends.

2.1.3.1 Start Events

A Start Event indicates where a particular process starts. In terms of sequence flows, the Start Event starts the flow of a process, and thus, cannot have any incoming sequence flow.

There are 10 types of Start Events used in business process modeling (Table 1).

Table 1 -- Types of Start Events in Business Process Modeling

Start Event	Stereotype and Description	Notation
None Start Event	«NoneStartEvent» [InitialNode] A None Start Event does not have a defined trigger that invokes the start of a process.	

Start Event	Stereotype and Description	Notation
Message Start Event	«MessageStartEvent» [InitialNode] A Message Start Event shows that a message from a participant has arrived and triggered the start of a process. Message Start Event displays on the diagram: • Message Start Event name if the name is specified, or. • Message Ref property value if the name is unspecified, or. • Operation Ref property if name and Message Ref are not specified. When a Message Start Event is owned by an Event SubProcess, it can be: • Interrupting. The Message Start Event interrupts the process contained in the Event SubProcess. The Interrupting Message Start Event is drawn with a solid border. • Non-Interrupting. The Message Start Event does not interrupt the process contained in the Event SubProcess. The Interrupting Message Start Event is drawn with a dashed border.	 Interrupting  Non-Interrupting
Timer Start Event	«TimerStartEvent» [InitialNode] A Timer Start Event allows for a particular time-date or cycle setting, for example, every Monday at 9 A.M., to trigger the start of a process. Timer Start Event displays on the diagram: • .Timer Start Event name if the name is specified, or. • Time Cycle property name if the name is unspecified, or. • Time Date property if name and Time Cycle are unspecified. When a Timer Start Event is owned by an Event SubProcess, it can be: • Interrupting. The Timer Start Event interrupts the process contained in the Event SubProcess. The Interrupting Timer Start Event is drawn with a solid border. • Non-Interrupting. The Timer Start Event does not interrupt the process contained in the Event SubProcess. The Interrupting Timer Start Event is drawn with a dashed border.	 Interrupting  Non-Interrupting
Compensation Start Event	«CompensationStartEvent» [InitialNode] A Compensation Start Event is allowed to trigger an in-line Compensation Event Sub-Process only. The event is triggered when the compensation occurs.	

Start Event	Stereotype and Description	Notation
Conditional Start Event	«ConditionalStartEvent» [InitialNode] A Conditional Start Event is triggered when a condition, such as “S&P 500 changes by more than 10% since opening” or “Temperature above 300C” becomes true. Conditional Start Event displays on the diagram: • Conditional Start Event name if the name is specified, or. • Condition property value if the name is unspecified. When a Conditional Start Event is owned by an Event SubProcess, it can be: • Interrupting. The Conditional Start Event interrupts the process contained in the Event SubProcess. The Interrupting Conditional Start Event is drawn with a solid border. • Non-Interrupting. The Conditional Start Event does not interrupt the process contained in the Event SubProcess. The Interrupting Conditional Start Event is drawn with a dashed border. **NOTE:** The condition expression of the event must become “false”, and then” true” before the event can be triggered again.	 Interrupting  Non-Interrupting
Escalation Start Event	«EscalationStartEvent» [InitialNode] An Escalation Start Event implements measures to expedite the completion of a business activity. Escalation Start Event displays on the diagram: • Escalation Start Event name if the name is specified, or. • Escalation Code property value if then name is unspecified. When an Escalation Start Event is owned by an Event SubProcess, it can be: • Interrupting. The Escalation Start Event interrupts the process contained in the Event SubProcess. The Interrupting Escalation Start Event is drawn with a solid border. • Non-Interrupting. The Escalation Start Event does not interrupt the process contained in the Event SubProcess. The Interrupting Escalation Start Event is drawn with a dashed border. **NOTE:** An Escalation Start Event is allowed to trigger an in-line Event SubProcess only.	 Interrupting  Non-Interrupting

Start Event	Stereotype and Description	Notation
Error Start Event	«ErrorStartEvent» [InitialNode] An Error Start Event is allowed to trigger an in-line Event SubProcess only. Error Start Event displays on the diagram: • Error Start Event name if the name is specified, or. • Error Ref property value if name is unspecified.	
Signal Start Event	«SignalStartEvent» [InitialNode] A Signal Start Event shows that a signal, which has been broadcast from another process, has arrived and triggered the start of a process. Signal Start Event displays on the diagram: • Signal Start Event name if the name is specified, or. • Signal Ref property value if the name is unspecified. When a Signal Start Event is owned by an Event SubProcess, it can be: • Interrupting. The Signal Start Event interrupts the process contained in the Event SubProcess. The Interrupting Signal Start Event is drawn with a solid border. • Non-Interrupting. The Signal Start Event does not interrupt the process contained in the Event SubProcess. The Interrupting Signal Start Event is drawn with a dashed border.	 Interrupting  Non-Interrupting
Multiple Start Event	«MultipleStartEvent» [InitialNode] A Multiple Start Event indicates that there are multiple ways to trigger a process. However, only one way is required. When a Multiple Start Event is owned by an Event SubProcess, it can be: • Interrupting. The Multiple Start Event interrupts the process contained in the Event SubProcess. The Interrupting Multiple Start Event is drawn with a solid border. • Non-Interrupting. The Multiple Start Event does not interrupt the process contained in the Event SubProcess. The Interrupting Multiple Start Event is drawn with a dashed border.	 Interrupting  Non-Interrupting

Start Event	Stereotype and Description	Notation
Parallel Multiple Start Event	«ParallelMultipleStartEvent» [InitialNode] A Parallel Multiple Start Event says that there are multiple triggers required before a process can be instantiated. When a Parallel Multiple Start Event is owned by an Event SubProcess, it can be: • Interrupting. The Parallel Multiple Start Event interrupts the process contained in the Event SubProcess. The Interrupting Parallel Multiple Start Event is drawn with a solid border. • Non-Interrupting. The Parallel Multiple Start Event does not interrupt the process contained in the Event SubProcess. The Interrupting Parallel Multiple Start Event is drawn with a dashed border.	 Interrupting  Non-Interrupting

2.1.3.2 Intermediate Events

An Intermediate Event indicates that something is happening somewhere between the start and end of a process. Intermediate Events affect the flow of a process, but do not start or directly terminate the process.

Intermediate Events can be used to:

- show where messages are expected or sent within a process
- show delays that are expected within a process
- interrupt normal flow through exception handling
- show extra work required for a compensation

Intermediate Events can be defined in two ways:

(i) Events catching a trigger

(ii) Events showing a result

The types of Intermediate Catch Events used in business process modeling are described in Table 2 below.

Table 2 -- Types of Intermediate Catch Events in Business Process Modeling

Intermediate Event	Stereotype and Description	Notation
None Intermediate Event	«NoneIntermediateEvent» [InitialNode] A None Intermediate Event does not have a defined trigger. It is used to model methodologies that use events to indicate some changes in a state in a process.	
Message Catching Intermediate Event	«MessageCatchIntermediateEvent» [AcceptEventAction] Message Catching Intermediate Event displays on the diagram: • Message Catching Intermediate Event name if the name is specified, or. • Message Ref property value if the name is unspecified, or. • Operation Ref property if name and Message Ref are not specified. A Message Catching Intermediate Event is used to receive a message. It will cause a process to continue, if it is waiting for the message.	

Intermediate Event	Stereotype and Description	Notation
Message Throwing Intermediate Event	«MessageThowIntermediateEvent» [SendObjectAction] Message Throwing Intermediate Event displays on the diagram: • Message Throwing Intermediate Event name if the name is specified, or. • Message Ref property value if the name is unspecified, or. • Operation Ref property if name and Message Ref are not specified. A Message Throwing Intermediate Event is used to send a message.	
Timer Catching Intermediate Event	«TimerCatchIntermediateEvent» [AcceptEventAction] A Timer Catching Intermediate Event acts as a delay mechanism based on a particular time-date or cycle, for example, every Monday at 9 A.M. Timer Catching Intermediate Event displays on the diagram: • .Timer Catching Intermediate Event name if the name is specified, or. • Time Cycle property name if the name is unspecified, or. • Time Date property if name and Time Cycle are unspecified.	
Escalation Throwing Intermediate Event	«EscalationThowIntermediateEvent» [SendObjectAction] An Escalation Throwing Intermediate Event raises an Escalation. Escalation Throwing Intermediate Event displays on the diagram: • Escalation Throwing Intermediate Event name if the name is specified, or. • Escalation Code property value if then name is unspecified.	

Intermediate Event	Stereotype and Description	Notation
Compensation Throwing Intermediate Event	«CompensationThowIntermediateEvent» [SendObjectAction] A Compensation Throwing Intermediate Event indicates that a compensation is necessary. If an activity, which has been succesfully completed, is identified, then it will be compensated. If no Activity is identified, all successfully completed Activities visible from a Compensation Throwing Intermediate Event will be compensated in reverse order of their sequence flows. To be compensated, that Activity must have a boundary Compensation Event or contain a compensation Event Sub-Process.	
Conditional Catching Intermediate Event	«ConditionalCatchIntermediateEvent» [AcceptEventAction] A Conditional Catching Intermediate Event will be triggered when a condition becomes “true”. 300C” becomes true. Conditional Catching Intermediate Event displays on the diagram: • Conditional Catching Intermediate Event name if the name is specified, or. • Condition property value if the name is unspecified.	
Link Catching Intermediate Event	«LinkCatchIntermediateEvent» [AcceptEventAction] A Link Intermediate Event provides the capability for connecting two sections of a process. This event can be used to create looping situations or to avoid long sequence flow lines, as “Off-Page Connectors” to print a Process across multiple pages, or as generic “Go To” objects within a Process level. The use of Link Events is limited to one for each single Process level, that is, it cannot link a parent Process with a Sub-Process. A Link Catching Intermediate Event is used to catch a link from a Link Throwing Intermediate Event Link Catching Intermdiate Event displays: • Link Catching Intermediate Event name if the name is specified, or. • Source property valueif the name is unspecified.	

Intermediate Event	Stereotype and Description	Notation
Link Throwing Intermediate Event	«LinkThowIntermediateEvent» [SendObjectAction] A Link Throwing Intermediate Event is used to throw a link to a Link Catching Intermediate Event. Link Throwing Intermdiate Event displays: • Link Throwing Intermediate Event name if the name is specified, or. • Target Link Event property valueif the name is unspecified	
Signal Catching Intermediate Event	«SignalCatchIntermediateEvent» [AcceptEventAction] A Signal Catching Intermediate Event is used to receive a signal. Signal Catching Intermediate Event displays on the diagram: • Signal Catching Intermediate Event name if the name is specified, or. • Signal Ref property value if the name is unspecified. Signals in business process modeling are used for general communication within and across process levels.	
Signal Throwing Intermediate Event	«SignalThowIntermediateEvent» [SendObjectAction] Signal Throwing Intermediate Event displays on the diagram: • Signal Throwing Intermediate Event name if the name is specified, or. • Signal Ref property value if the name is unspecified. A Signal Throwing Intermediate Event is used to send a signal.	
Multiple Caching Intermediate Event	«MultipleCatchIntermediateEvent» [AcceptEventAction] A Multiple Caching Intermediate Event shows that multiple types of events can be caught. Only one of the defined event triggers is required.	
Multiple Throwing Intermediate Event	«MultipleThowIntermediateEvent» [SendObjectAction] A Multiple Throwing Intermediate Event shows that multiple types of events are thrown. All of the defined triggers will be thrown by this event.	
Parallel Multiple Catching Intermediate Event	«MultipleParalllelCatchIntermediateEvent» [AcceptEventAction] A Parallel Multiple Caching Intermediate Event shows that multiple types of events are caught. All of the defined event triggers are required to trigger this event.	

Related concepts

Compensation

2.1.3.3 Boundary Events

A Boundary Event (Figure 6) is a Catching Intermediate Event that is attached to the boundary of any of the following activities:

- SubProcess, Task, or Call Activity,
- SubChoreography, Choreography Task, or Call Choreography.

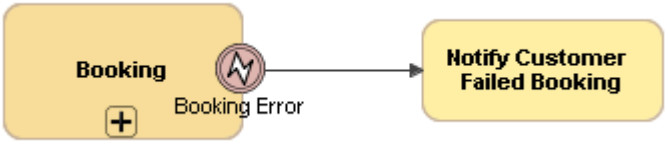


Figure 6 -- Error Boundary Event Attached to SubProcess

Table 3 will describe all of the Boundary events used in business process modeling.

Table 3 -- Types of Boundary Events in Business Process Modeling

Boundary Event	Stereotype and Description	Notation
Message Boundary Event	«MessageBoundaryEvent» [AcceptEventAction] A Message Boundary Event is triggered by an arrived message. The normal flow is changed into an exception flow when an event is triggered. The boundary of a Message Event that interrupts the activity to which it is attached, is solid. The boundary of a Message Event that does not interrupt the activity to which it is attached, is dashed. Message Boundary Event displays on the diagram: • Message Boundary Event name if the name is specified, or. • Message Ref property value if the name is unspecified, or. • Operation Ref property if name and Message Ref are not specified.	 Interrupting  Non-Interrupting

Boundary Event	Stereotype and Description	Notation
Timer Boundary Event	«TimerBoundaryEvent» [AcceptEventAction] A particular time-date or cycle, for example, every Monday at 9 A.M., can be specified to trigger a Timer Boundary Event. A Timer Boundary Event, which is attached to the boundary of an activity, changes the normal flow into an exception flow upon being triggered. The boundary of a Timer Boundary Event that interrupts the activity to which it is attached, is solid. The boundary of a Timer Event that does not interrupt the activity to which it is attached, is dashed. Timer Booundary Event displays on the diagram: • .Timer Boundary Event name if the name is specified, or. • Time Cycle property name if the name is unspecified, or. • Time Date property if name and Time Cycle are unspecified.	 Interrupting  Non-Interrupting
Escalation Boundary Event	«EscalationBoundaryEvent» [AcceptEventAction] An Escalation Boundary Event is used to catch an escalation. The boundary of an Escalation Event that interrupts the activity to which it is attached, is solid. The boundary of an Escalation Event that does not interrupt the activity to which it is attached, is dashed. Escalation Boundary Event displays on the diagram: • Escalation Boundary Event name if the name is specified, or. • Escalation Code property value if then name is unspecified.	 Interrupting  Non-Interrupting
Error Boundary Event	«ErrorBoundaryEvent» [AcceptEventAction] An Error Boundary Event reacts to (catches) a named error or any error if a name is not specified. An Error Boundary Event always interrupts the activity to which it is attached. The boundary of the event is always solid. Error Boundary Event displays on the diagram: • Error Boundary Event name if the name is specified, or. • Error Ref property value if name is unspecified.	 Interrupting

Boundary Event	Stereotype and Description	Notation
Cancel Boundary Event	«CancelBoundaryEvent» [AcceptEventAction] A Cancel Boundary Event is used within a Transaction SubProcess. This type of Event must be attached to the boundary of a SubProcess and will be triggered in two cases: (i) If a Cancel End Event is reached within the Transaction SubProcess. (ii) If a Transaction Protocol “Cancel” message is received while a transaction is being performed. A Cancel Boundary Event always interrupts the activity to which it is attached. The boundary of the event is always solid.	 Interrupting
Compensation Boundary Event	«CompensationBoundaryEvent» [AcceptEventAction] A Compensation Boundary Event is used to "catch" a Compensation Event. The event will be triggered by a thrown compensation targeting that activity. When the event is triggered, a Compensation Activity that is associated with it will be performed. The Interrupting or non-interrupting aspect does not apply in the case of a Compensation Boundary Event. Compensations can only be triggered after the completion of the activity to which they are attached. Thus they cannot interrupt the activity. The boundary of the event is always solid.	
Conditional Boundary Event	«ConditionalBoundaryEvent» [AcceptEventAction] A Conditional Boundary Event is triggered when a specified condition becomes true. When an event is triggered, the normal flow of an activity will be changed into an exception flow. The boundary of a Conditional Boundary Event that interrupts the activity to which it is attached, is solid. The boundary of a Conditional Boundary Event that does not interrupt the activity to which it is attached, is dashed.	 Interrupting  Non-Interrupting

Boundary Event	Stereotype and Description	Notation
Signal Boundary Event	«SignalBoundaryEvent» [AcceptEventAction] A Signal Boundary Event can receive a Signal. In this context, it will change the normal flow into an exception flow upon being triggered. A Signal Event differs from an Error Event because it defines a more general, non-error condition for interrupting Activities, such as the successful completion of another Activity, and it has a larger scope than the Error Event does. The boundary of a Signal Event that interrupts the activity to which it is attached, is solid. The boundary of a Signal Event that does not interrupt the activity to which it is attached, is dashed. Signal Boundary Event displays on the diagram: • Signal Boundary Event name if the name is specified, or. • Signal Ref property value if the name is unspecified.	 Interrupting  Non-Interrupting
Multiple Boundary Event	«MultipleBoundaryEvent» [AcceptEventAction] A Multiple Boundary Event indicates that there are multiple triggers assigned to the Event. Only one of the specified triggers is required. The Event that occurred changes the normal flow into an exception flow. The boundary of a Multiple Boundary Event that interrupts the activity to which it is attached, is solid. The boundary of a Multiple Boundary Event that does not interrupt the activity to which it is attached, is dashed.	 Interrupting  Non-Interrupting
Parallel Multiple Boundary Event	«MultipleParalllelBoundaryEvent» [AcceptEventAction] There are multiple triggers assigned to a Parallel Multiple Boundary Event and all of them are required to trigger the event. The boundary of a Parallel Multiple Boundary Event that interrupts the activity to which it is attached, is solid. The boundary of a Parallel Multiple Boundary Event that does not interrupt the activity to which it is attached, is dashed.	 Interrupting  Non-Interrupting

Related concepts

BPMN Process

Compensation

2.1.3.4 End Events

An End Event indicates where a particular process will end. In terms of sequence flows, an End Event ends the flow of a process, and thus, will not have any outgoing sequence flow.

There are nine (9) End Event types that are used in business process modeling (Table 4).

Table 4 -- Types of End Events in Business Process Modeling

End Event	Stereotype and Description	Notation
None End Event	«NoneEndEvent» [ActivityFinalNode] A None Start Event does not have a defined result.	
Message End Event	«NoneEndEvent» [ActivityFinalNode] A Message End Event indicates that a message will be sent when a process is completed. Message End Event displays on the diagram: • Message End Event name if the name is specified, or. • Message Ref property value if the name is unspecified, or. • Operation Ref property if name and Message Ref are not specified.	
Error End Event	«NoneEndEvent» [ActivityFinalNode] An Error End Event indicates that a named error will be generated and this will result in the termination of all of the currently active threads in a particular SubProcess. Error End Event displays on the diagram: • Error End Event name if the name is specified, or. • Error Ref property value if name is unspecified.	
Escalation End Event	«EscalationEndEvent» [ActivityFinalNode] An Escalation End Event indicates that an Escalation should be triggered. Other active threads will not be affected by this and will continue to be executed. Escalation End Event displays on the diagram: • Escalation End Event name if the name is specified, or. • Escalation Code property value if then name is unspecified.	

End Event	Stereotype and Description	Notation
Cancel End Event	«CancelEndEvent» [ActivityFinalNode] A Cancel End Event is used within a Transaction SubProcess. It indicates that the transaction should be cancelled and triggers a Cancel Boundary Event attached to the SubProcess boundary. It also indicates that a transaction protocol cancel message should be sent to any entities involved in the transaction.	
Compensation End Event	«CompensationEndEvent» [ActivityFinalNode] A Compensation End Event indicates that a compensation is necessary. If an activity, which has successfully been completed, identified, then that activity will be compensated. If no activity is identified, all successfully completed activities visible from the Compensation End Event will be compensated in reverse order of their sequence flows. To be compensated, an activity must have a Compensation Boundary Event or contain a Compensation Event SubProcess.	
Signal End Event	«SignalEndEvent» [ActivityFinalNode] A Signal End Event indicates that a signal will be broadcast when the end has been reached. Signal End Event displays on the diagram: • Signal End Event name if the name is specified, or. • Signal Ref property value if the name is unspecified. Note that the signal, which is broadcast to any process that can receive the signal, can be sent across process levels or pools.	
Terminate End Event	«TerminateEndEvent» [ActivityFinalNode] A Terminate End Event indicates that all activities in a process should be immediately ended including all of the instances of multi-instance activities. The process will be ended without any compensation or event handling.	
Multiple End Event	«NoneEndEvent» [ActivityFinalNode] A Multiple End Event shows that there are multiple consequences of ending a process and all of them will occur, for example, multiple messages might be sent.	

2.1.4 Gateways

A Gateways allows you to control the flow of a process through a sequence flow. The term “gateway” implies that there is a gating mechanism that either allows or disallows passage through the Gateway. Tokens that arrive at the gateway can be merged on input and/or split on output.

If you do not need to control the flow of a process, you do not need a gateway.

Table 5 will describe five types of gateways defined in business process modeling.

Table 5 -- Types of Gateways in Business Process Modeling

Gateway Type	Stereotype	Notation
Exclusive Gateway (Decision)	«ExclusiveGateway» [DecisionNode]	
Event-Based Gateway	«EventBasedGateway» [ForkNode]	
Inclusive Gateway	«InclusiveGateway» [ForkNode]	
Complex Gateway	«ComplexGateway» [ForkNode]	
Parallel Gateway	«ParallelGateway» [ForkNode]	

2.1.4.1 Exclusive Gateway

A diverging Exclusive Gateway (Decision) is used to create alternative paths within a process flow. This is basically the “diversion point in the road” for a process. Only one alternative path can be taken for a given instance of the process.

A Decision can be thought of as a question that is asked at a particular point in the process. The question has a defined set of alternative answers. Each question is associated with a condition Expression that is associated with the Gateway’s outgoing sequence flow (Figure 7).

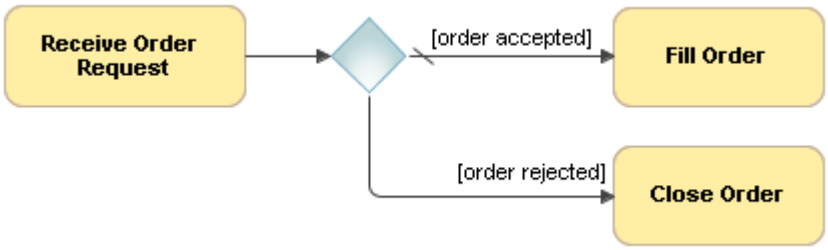


Figure 7 -- Diverging Exclusive Gateway Example

A converging Exclusive Gateway is used to merge alternative paths. Each incoming sequence flow token is routed to the outgoing sequence flow without synchroning them.

2.1.4.2 Inclusive Gateway

A diverging Inclusive Gateway (Inclusive Decision) is used to create not only alternative but also parallel paths within a process flow. Unlike the Exclusive Gateway, all condition expressions will be evaluated. The *true* evaluation of one condition expression does not exclude the evaluation of the other condition expressions. All of the sequence flows with a *true* evaluation will be traversed by a token.

Since each path is considered to be independent, all combinations of the paths may be taken, from zero to all (Figure 8). However, it should be designed in such a way that at least one path is taken.

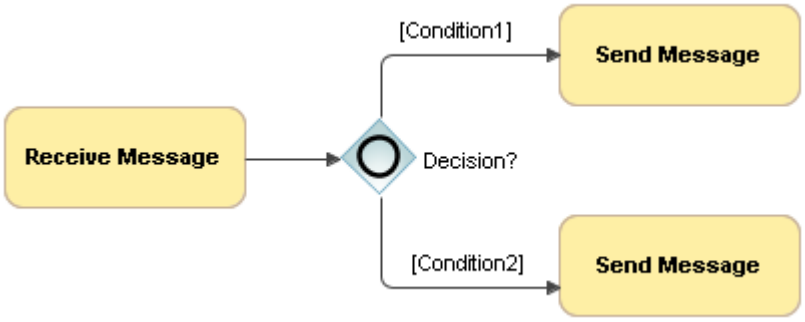


Figure 8 -- Diverging Inclusive Gateway Example

A converging Inclusive Gateway is used to merge a combination of alternative and parallel paths. A control flow token arriving at an Inclusive Gateway may be synchronized with some other tokens that arrive later at this gateway.

2.1.4.3 Parallel Gateway

A Parallel Gateway is used to synchronize (combine) and create parallel flows (Figure 9).

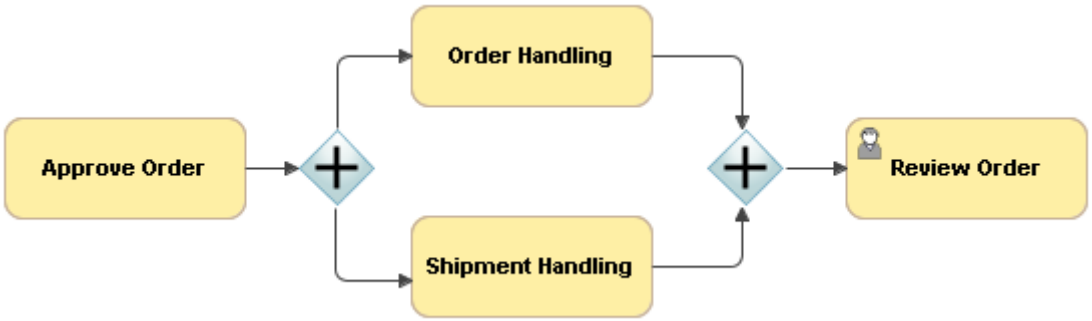


Figure 9 -- Parallel Gateway Example

2.1.4.4 Complex Gateway

A Complex Gateway can be used to model complex synchronization behavior (Figure 10). The Complex Gateway property Activation Condition is used to describe precise behavior. For example, the activation condition specifies that tokens on three out of five incoming sequence flows are needed to activate the gateway. Which tokens the gateway will produce is determined by the conditions on the outgoing sequence flow as in the split behavior of an Inclusive Gateway.

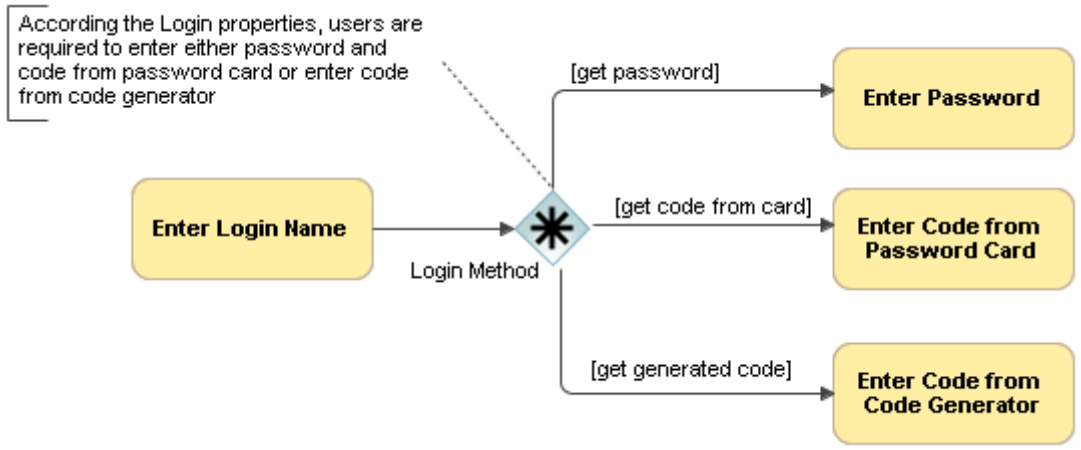


Figure 10 -- Complex Gateway Example

2.1.4.5 Event Based Gateway

An Event Based Gateway represents a branching point in a process where alternative paths that follow the gateway are based on the events that occur rather than on the evaluation of expressions using process data (as with an Exclusive or Inclusive Gateway). A specific event, usually the receipt of a message, determines the path that will be taken (Figure 11). Basically, the decision has been made by another participant based on data that is not visible to the process, thus, requiring the use of an Event Based Gateway.

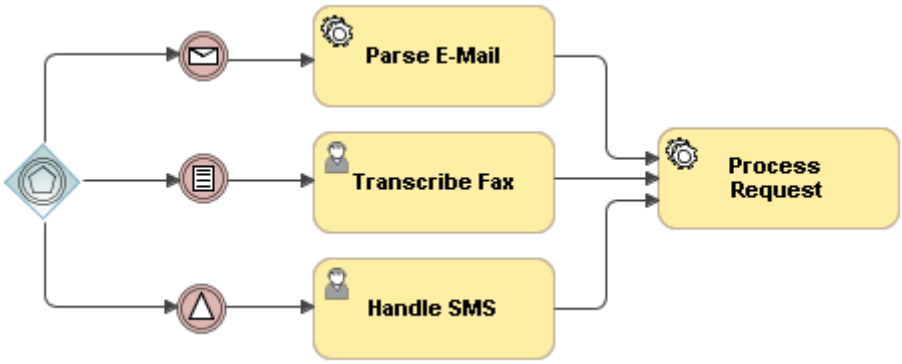


Figure 11 -- Event Based Gateway Example

Related concepts

Intermediate Events

2.1.5 Error

An Error represents the contents of an error event or the fault of a failed operation. An Error is generated when there is a critical problem in the processing of an activity or when the execution of an operation fails.

Element	Stereotype	Icon
Error	«Error» [Class]	

Related concepts

Events

2.1.6 Message

Element	Stereotype	Icon
Message	«Message» [CentralBufferNode]	

A Message represents the contents of a communication between two participants. It is passed by a message flow and is sent/received by a message event.

Related procedures

Creating a Message Flow

Related concepts

Participant

Events

2.1.7 Participant

A Participant represents a specific partner entity, for example, a company, and/or a more general partner role, for example, a buyer, seller, or manufacturer, who are participants in a collaboration. A Participant is often responsible for the execution of the process enclosed in a pool.

Element	Stereotype	Icon
Participant	«Participant» [class]	

Related procedures

Creating Participants

Creating Pool and Lane

Related concepts

Pool and Lane

Communication

Choreography Activities

2.1.8 Sequence Flow

Element	Stereotype	Icon
Sequence Flow	«SequenceFlow» [ControlFlow]	

A Sequence Flow is used to show the order of flow elements in a process or choreography (Figure 12).

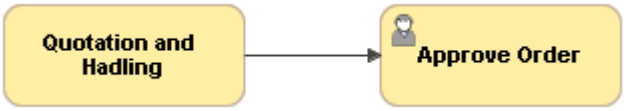


Figure 12 -- Sequence Flow Drawn between Two Tasks

The source and target of a Sequence Flow must be from the set of the following elements:

- Events (Start, Intermediate, and End events)
- Activities (Task and Sub-Process; for Processes)
- Choreography Activities (Choreography Task and Sub-Choreography)
- Gateways

A Sequence Flow can optionally define a condition expression, indicating that a token will be passed down the Sequence Flow only if the expression is evaluated to be true.

A Condition expression is typically used when the source of a Sequence Flow is a Gateway or an Activity. A conditional outgoing Sequence Flow from an Activity is drawn with a mini-diamond (indicator) at the beginning of the Sequence Flow (Figure 13).

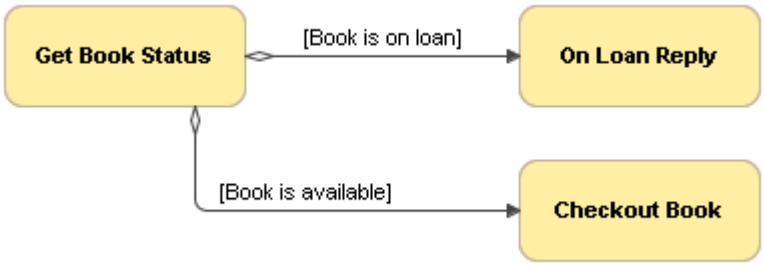


Figure 13 -- Conditional Sequence Flow Example

NOTE	A Conditional Sequence Flow outgoing from a Gateway cannot be drawn with a mini-diamond at the beginning of the Sequence Flow.

A Sequence Flow, which has an exclusive, inclusive, or complex gateway, or an activity as its source, can also be defined as a default Sequence Flow. The default Sequence Flow is distinguished by the presence of a back-slash (Figure 14).

A default Sequence Flow will be taken (a token is passed) only if all of the other outgoing Sequence Flows from the activity or gateway are not valid, that is, their condition expressions are false.

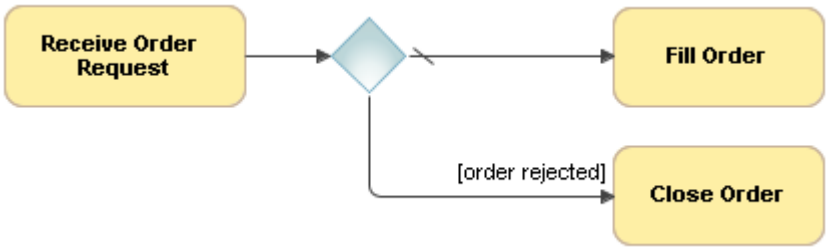


Figure 14 -- Default Sequence Flow Example

Related procedures

Creating a Sequence Flow

Related concepts

BPMN Process
Choreography Activities
Events
Gateways

2.1.9 Message Flow

Element	Stereotype	Icon
Message Flow	«MessageFlow» [Dependency]	

A Message Flow is used to show the flow of messages between two participants who are prepared to send and receive them (Figure 15).

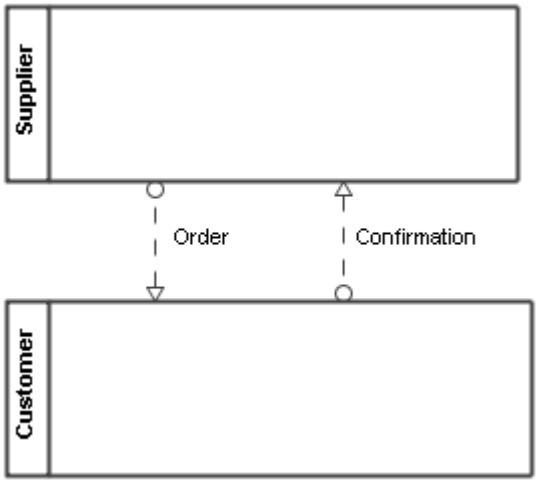


Figure 15 -- Message Flow Drawn between Two Pools

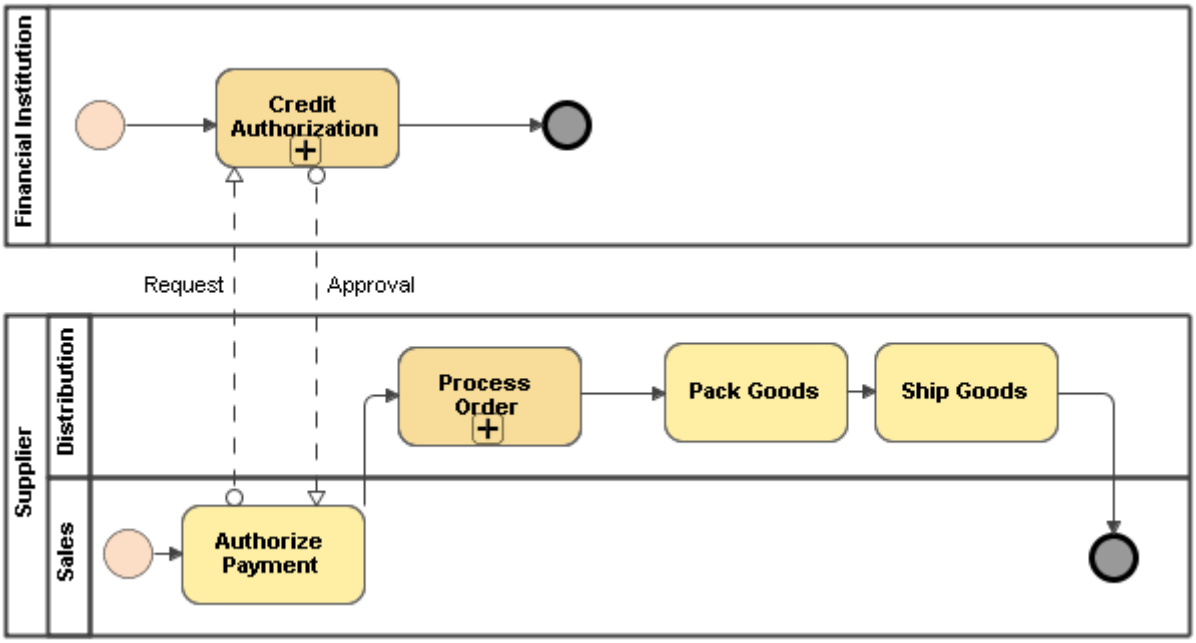


Figure 16 -- A Message Flow Drawn between Pools Inner Elements

IMPORTANT	• A Message Flow must connect separate Pools. It can be connected to the pool boundary or element inside a pool. • A Message Flow cannot connect two elements in the same Pool.

Messages that are sent by a Message Flow can be displayed in a diagram in two ways: (i) associated with the Message Flow (Figure 17) and (ii) overlap the Message Flow (Figure 18). But, they can also be hidden.

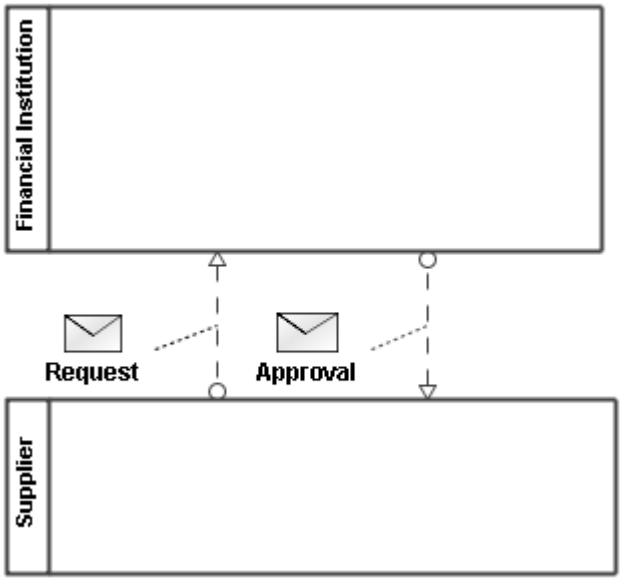


Figure 17 -- Message Associated with a Message Flow

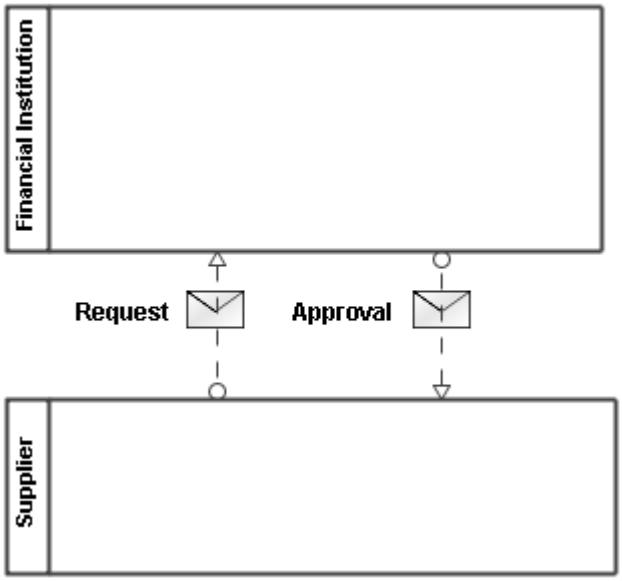


Figure 18 -- Message Overlapping a Message Flow

Related procedures

Creating a Message Flow

Related concepts

Pool and Lane

Message

2.2 BPMN Process Diagram

A BPMN Process diagram describes a sequence or flow of activities in an organization that shows how the business works (Figure 19). The diagram shows activities, events, and data that trigger or feed business activities. A BPMN Process diagram is similar to the UML Activity diagram with a much richer set of default message types and business process styles of notation.

The Process diagrams are based on the UML Activity diagram, and include restrictions and extensions as defined by BPMN.

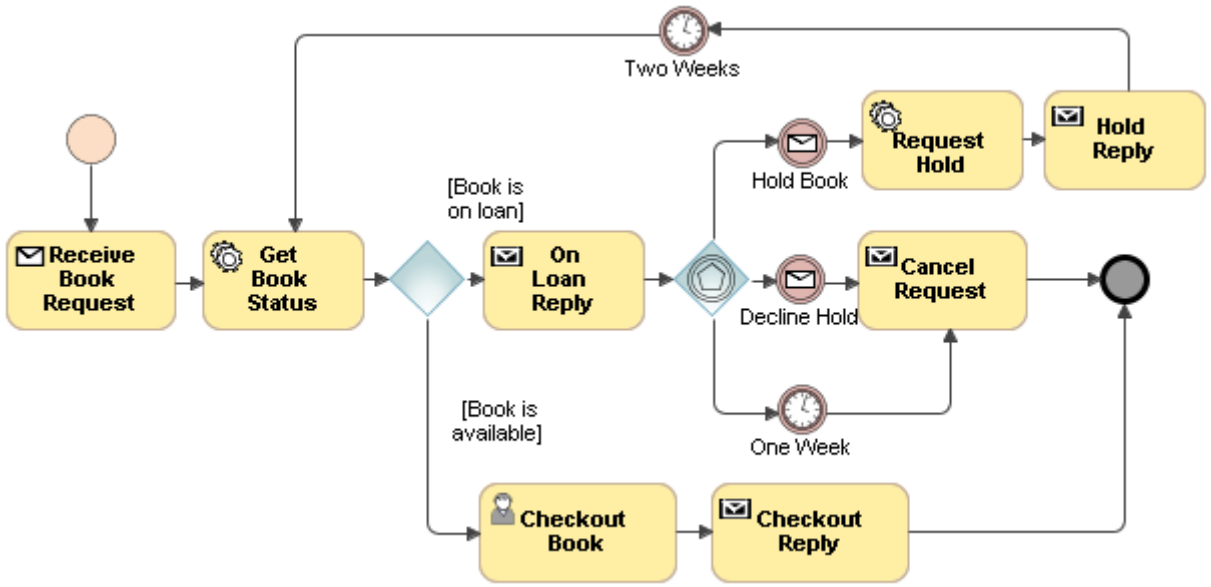


Figure 19 -- BPMN Process Diagram

Related procedures

BPMN Process Diagram Procedures

2.2.1 BPMN Process

Element	Stereotype	Icon
BPMN Process	«BPMNProcess» [Activity]	

A BPMN process element describes how a process is performed. This element is a container for the BPMN Process diagram and its elements.

2.2.2 Activities

An Activity is work that is performed within a business process. An Activity can be atomic or non-atomic (compound). There are three types of Activities that are part of a Process:

2.2.2.1 Task

2.2.2.2 SubProcess

2.2.2.3 Call Activity

If the Activity property **Is For Compensation** = *true*, the activity will be used for compensation, which means that this Activity will be activated only when a Compensation Event is detected and initiated under the Compensation Event visibility scope. The Compensation indicator (marker) is displayed for all activities that are used for the compensation (Figure 20).

Figure 20 -- Task and Collaped SubProcess with Compensation Indicator

Activities can be repeated sequentially, essentially behaving like a loop. The presence of loop characteristics signifies that an activity has the looping behavior. There are two types of looping characteristics defined in BPMN: (a) Standard Loop and (b) MultiInstance Loop.

Table 6 -- Characteristics of Standard and MultiInstance Loops

Characteristics	**Stereotype**	**Marker**
Standard Loop	«StandardLoopCharacteristics» [CallBehaviourAction, OpaqueAction, StructuredActivityNode]	
MultiInstance Loop	«MultiInstanceLoopCharacteristics» [CallBehaviourAction, OpaqueAction, StructuredActivityNode]	Non-sequential Sequential

(a) Standard Loop

The Standard Loop indicator (marker) displayed on an activity shape shows that looping behavior based on a boolean condition is defined for this activity (Figure 21). Additional looping characteristics can be defined and the activity will loop as long as the boolean condition is true. The condition is evaluated for every loop iteration and can be evaluated at the beginning or end of the iteration. In addition, a numeric cap can be optionally specified. The number of iterations cannot exceed this cap.

Figure 21 -- Task and Collapsed SubProcess with Standard Loop Indicator

(b) MultiInstance Loop

The MultiInstance Loop indicator shows that a desired number of activity instances can be created. The instances can be executed in parallel (Figure 22) or sequentially (Figure 23). Either expression is used to specify the desired number of instances or a data driven setup that can be used.

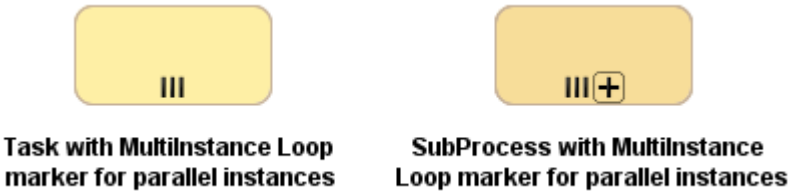


Figure 22 -- Task and Collapsed SubProcess with MultiInstance Indicator for Parallel Instances

Figure 23 -- Task and Collapsed SubProcess with MultiInstance Indicator for Sequential Instances

IMPORTANT	The Compensation, MultiInstance Loop, and Standard Loop indicators can be added for all types of activities.

Related procedures

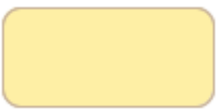
Managing Activities

2.2.2.1 Task

A Task is an atomic activity within a process flow. A Task is used when the work in a process cannot be broken down to a finer level of detail. Generally, an end-user and/or applications are used to perform the task when it is executed.

Table 7 below will define the types of Tasks used in business process modeling.

Table 7 -- Types of Tasks in Business Process Modeling

Task Type	Stereotype and Description	Notation
Task	«Task» [OpaqueAction] A Task that has no specified behavior.	

Task Type	Stereotype and Description	Notation
Service Task	«ServiceTask» [OpaqueAction] A Service Task is a task that uses some sort of service, which could be a Web service or an automated application.	
Send Task	«SendTask» [OpaqueAction] A Send Task is a simple task that is designed to send a message to an external participant. Once the message has been sent, the task is completed.	
Receive Task	«ReceiveTask» [OpaqueAction] A Receive Task is a simple task that is designed to wait for a message to arrive from an external participant (relative to the Process). Once the message has been received, the task is completed.	
User Task	«UserTask» [OpaqueAction] A User Task is a typical “workflow” task where a human performer performs the task with the assistance of a software application and is scheduled through a task list manager of some sort.	
Manual Task	«ManualTask» [OpaqueAction] A Manual Task is a task that is expected to be performed without the aid of any business process execution engine or application, for example, a telephone technician installing a telephone at a customer location.	
Business Rule Task	«BusinessRuleTask» [OpaqueAction] A Business Rule Task provides a mechanism for a process to provide inputs to a business rules engine and to get the output of calculations that the business rules engine might provide.	
Script Task	«ScriptTask» [OpaqueAction] A Script Task is executed by a business process engine. The modeler or implementer defines a script in a language that the engine can interpret. When the task is ready to start, the engine will execute the script. When the script is completed, the task will also be completed.	

Related procedures

Creating Tasks

2.2.2.2 SubProcess

A SubProcess is an activity, whose internal details have been modeled using activities, gateways, events, and sequence flow. A SubProcess is a graphical object within a process and it can also be “opened up” to show a lower-level process (Figure 24). SubProcesses define a contextual scope that can be used for attribute visibility and transactional scope for the handling exceptions of Events or for compensation.

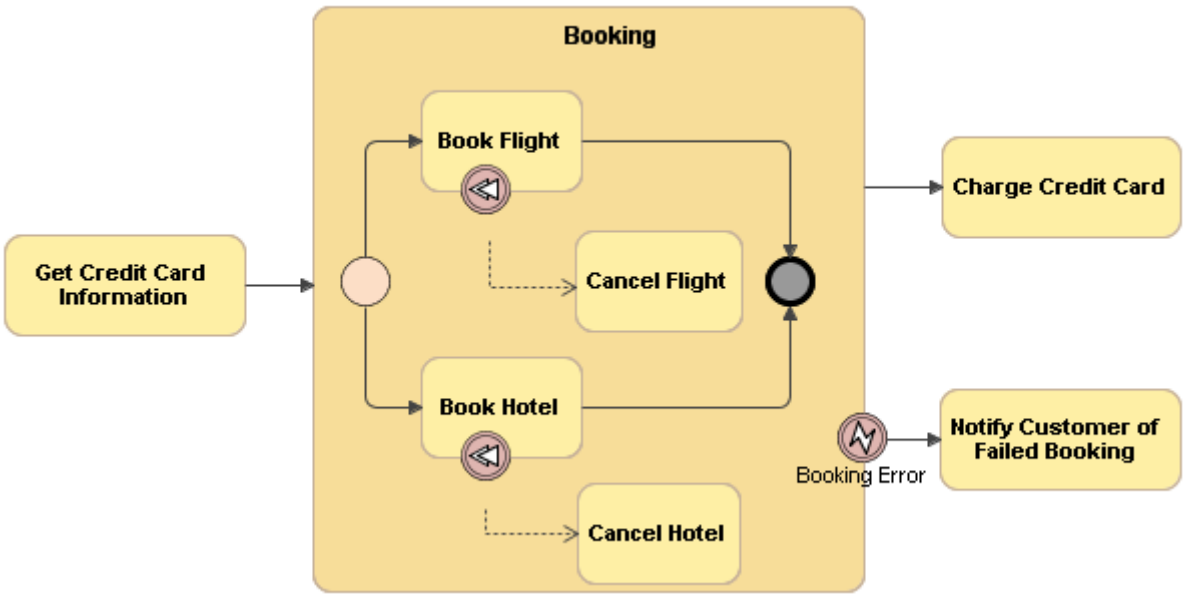


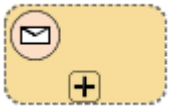
Figure 24 -- Expanded SubProcess Used in Sequence Flow

A collapsed view of SubProcess hides its details while an expanded view shows its content. A collapsed Sub-Process uses a plus sign (+) to distinguish it from a Task.

Table 8 below shows different types of Sub-Processes used in business process modeling.

Table 8 -- Types of Sub-Processes in Business Process Modeling

SubProcess Type	Stereotype and Description	Notation
SubProcess	«SubProcess» [StructuredActivityNode] A SubProcess is used to create a context for exception handling that applies to a group of activities. A collapsed SubProcesses can be used as a mechanism to show a compact and less-clutter group of parallel activities.	 Expanded  Collapsed

SubProcess Type	Stereotype and Description	Notation
Event SubProcess	«SubProcess» [StructuredActivityNode] An Event SubProcess is an ordinary SubProcess whose property Triggered By Event is set to true. An Event SubProcess is not a part of the normal flow of its parent process — there is no incoming or outgoing sequence flow. It is possible that an Event SubProcess will occur many times. Unlike the standard SubProcess that uses the flow of the parent process as a trigger, an Event Sub-Process has a start event with a trigger. Whenever the start event is triggered while the parent process is active, then the Event SubProcess will start. The Start Event icon of a collapsed Event SubProcess will be displayed on the top left corner of the SubPro-cess.	 Expanded  Collapsed  Collapsed (with its own Start Event)
Transaction	«Transaction» [StructuredActivityNode] A Transaction is a specialized type of SubProcess, whose special behavior is controlled through a transac-tion protocol (such as WS-Transaction).	 Expanded  Collapsed
AdHoc SubProcess	An AdHoc SubProcess is a specialized type of SubPro-cess, that is, a group of activities that have no required sequence relationships. A set of activities can be defined for the process, but the sequence and number of performances for the activities are determined by the performers of the activities.	 Expanded  Collapsed

Related procedures

Managing SubProcesses

2.2.2.3 Call Activity

Element	Stereotype	Icon
Call Activity	«CallActivity» [CallBehaviorAction]	

A Call Activity identifies the point in a process where a global process is used (Figure 25). The Call Activity acts as a 'wrapper' for the invocation of the global process within the execution. The activation of the Call Activity results in the transfer of control to the called global process.

A Call Activity shares the same notation as a Task or SubProcess with a thick line around the boundary of the shape.

Figure 25 -- Call Activitties Referencing Process

The BPMN 2.0 Call Activity corresponds to the Reusable Sub-Process of BPMN 1.2 and the BPMN 2.0 Sub-Process corresponds to the Embedded Sub-Process of BPMN 1.2.

Related concepts

BPMN Process

2.2.3 Items and Data

The traditional requirement of process modeling is to be able to model the items (physical or information items) that are created, manipulated, and used during the execution of a process.

This requirement is realized in BPMN through various constructs: Data Objects, Item Definition, Properties, Data Inputs, Data Outputs, Messages, Input Sets, Output Sets, and Data Associations.

2.2.3.1 Data Object

Element	Stereotype	Icon
Data Object	«DataObject» [CentralBufferNode]	

A Data Object is an element that stores or conveys items during process execution. The Data Object elements must be contained within the process or SubProcess elements.

A Data Object element can optionally reference a DataState element, which is the state of data contained in a Data Object.

A Data Object element, which references an element marked as a collection, is visualized differently (Figure 26).

Figure 26 -- Data Object Notation

Related procedures

Creating Data Items

2.2.3.2 Data Store

Element	Stereotype	Icon
Data Store	«DataStore» [CentralBufferNode]	

A Data Store (Figure 27) provides a mechanism for activities to retrieve or update stored information that will persist beyond the scope of a process.

Figure 27 -- Data Store Notation

2.2.3.3 Data Input and Data Output

Element	Stereotype	Icon
Data Input	«DataInput» [CentralBufferNode]	
Data Output	«DataOutput» [CentralBufferNode]	

Activities and processes often require data in order to execute. In addition, they may produce data during or as the result of the execution. Data requirements are captured as Data Input. The produced data are captured using Data Output (Figure 28).

Figure 28 -- Data Input and Data Output Notation

2.2.3.4 Data Association

Element	Stereotype	Icon
Data Association	«DataAssociation» [ObjectFlow]	

Data Association is used to model how data are pushed into or pulled from item-aware elements (Figure 29). Tokens do not flow along a Data Association, and as a result they have no direct effect on the flow of a process.

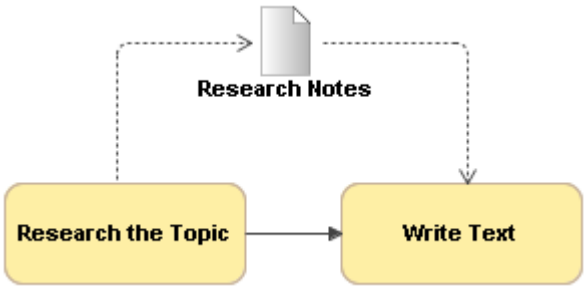


Figure 29 -- Data Association Showing the Flow of Data Object

Alternatively, Data Objects can be directly associated with a Sequence Flow to represent the same input/output Data Associations (Figure 30). This is a visual shortcut that is stored in a model as two Data Associations: one from Activity to Data Object, and another from Data Object to Activity.

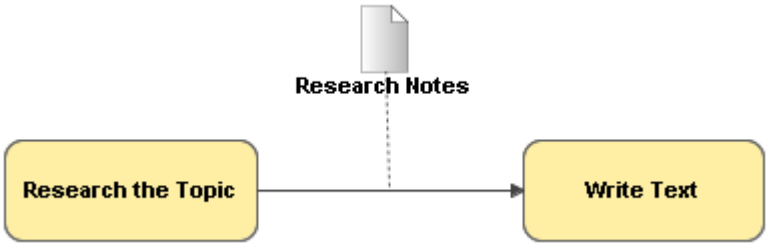


Figure 30 -- Data Association Associated with a Sequence Flow

2.2.4 Compensation

A Compensation in business process modeling is concerned with undoing steps that have already been successfully completed, because their results and possible side effects are no longer desired and need to be reversed. If an activity is still active, it cannot be compensated and needs to be canceled. The cancellation of a SubProcess may produce a compensation of the already successfully completed portions of an active activity.

A Compensation is performed by a compensation handler. A compensation handler performs the steps necessary to reverse the effects of an activity. For a SubProcess, the compensation handler will have access to the SubProcess data once they have been completed (“snapshot data”).

A compensation handler is a set of activities that are not connected to other portions of the BPMN model. The compensation handler starts with either one of the Compensation Events:

(i) Compensation Boundary Event

(ii) The handler’s Start Event (in case of a Compensation Event Sub-Process)

A compensation handler connected through a boundary event can only perform a “black-box” compensation of the original activity. This compensation is modeled with a specialized Compensation Activity, which is connected to the boundary event through an association. The Compensation Activity, which can be either a Task or a Sub-Process, is marked to show that it is used for compensation only and is outside the normal flow of the Process (Figure 31).

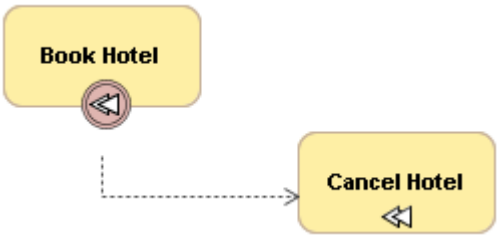


Figure 31 -- Compensation through Compensation Boundary Event to Compensation Task

Another way to model a compensation is using the compensation handler, which starts with the Start Event of an Event SubProcess, which is contained within a Process or SubProcess (Figure 32). Just like any other Compensation Activities, a Compensation Event SubProcess is outside the normal flow of a process. The Event SubProcess, which is marked with a dotted line boundary, has access to data that are part of the parent, a snapshot at the point in time when the parent has been completed. A Compensation Event SubProcess can recursively trigger a compensation for activities contained in its parent.

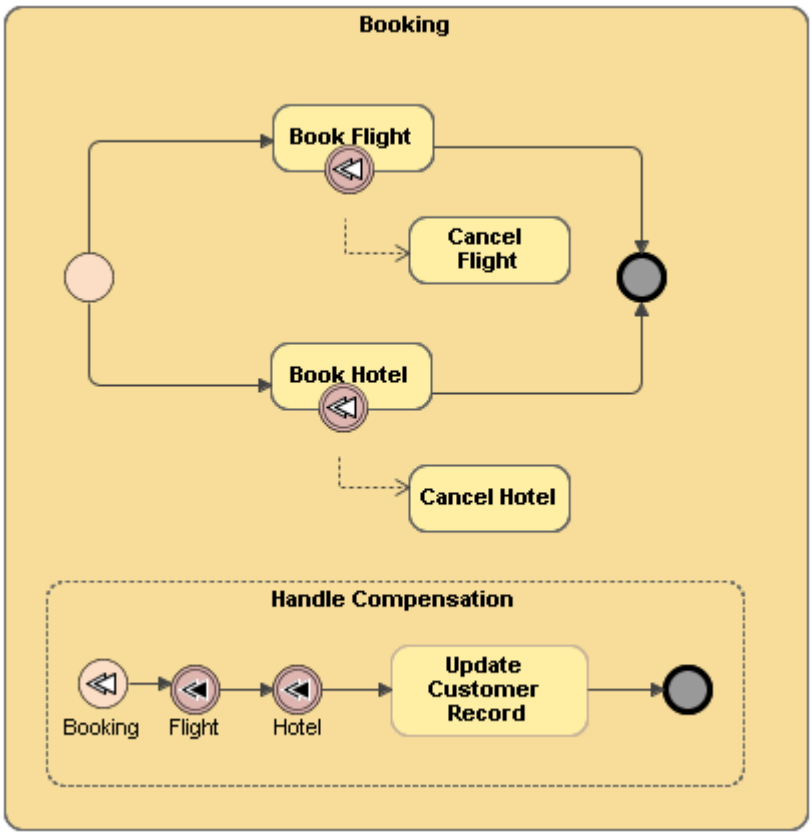


Figure 32 -- Compensation Defined by Event SubProcess

Related concepts

- BPMN Process
- SubProcess
- Events

2.3 BPMN Collaboration Diagram

A Collaboration represents the interactions between two or more business entities. A Collaboration diagram depicts a global point of view. It shows the interactions between participants in general.

A Collaboration contains two or more pools, representing the participants in the collaboration. Messages exchanged between the participants are shown by the message flows that connect two pools (or the objects within the pools) (Figure 33).

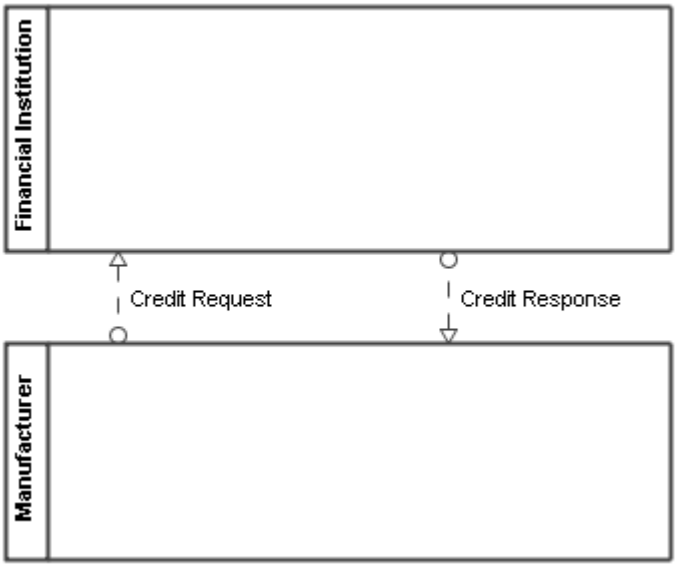


Figure 33 -- Collaboration Diagram with Two "Black Box" Pools

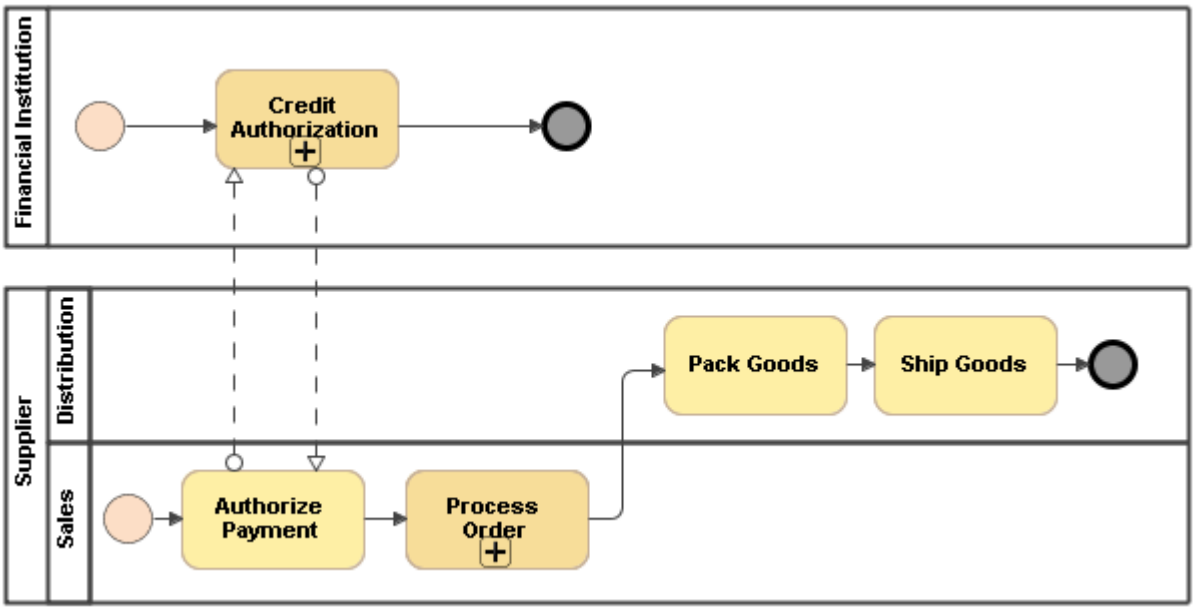


Figure 34 -- Collaboration Diagram with Two Pools Showing a Process

A Collaboration diagram can also show distinct conversations between the collaborating participants in a domain. Communications are defined by the conversations, participants, and conversation links between them (Figure 35).

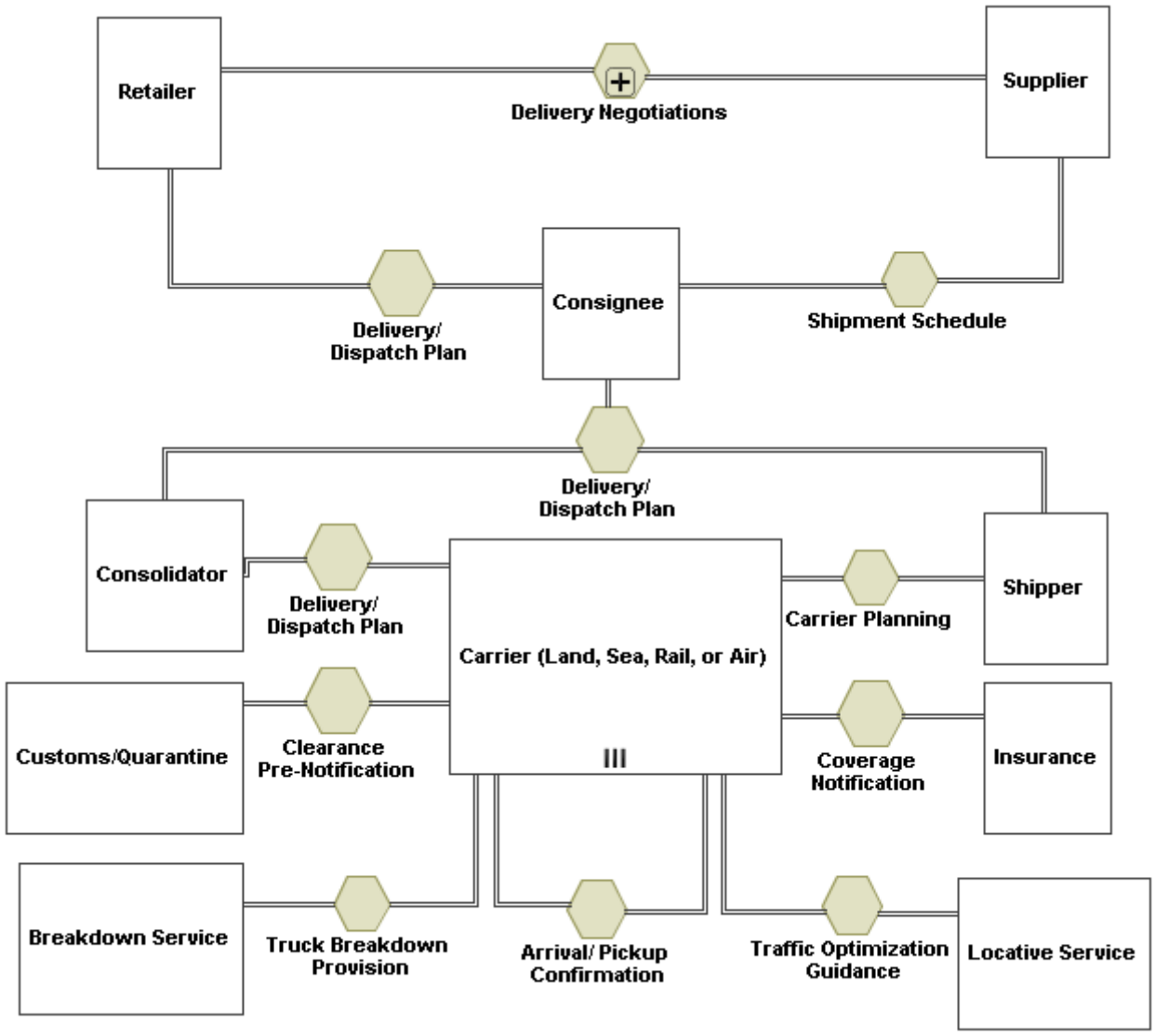


Figure 35 -- BPMN Collaboration Diagram with Conversations

The BPMN Collaboration diagrams are based on the UML Activity diagram and include restrictions and extensions as defined by BPMN. The elements from a BPMN Process diagram can be displayed in the BPMN Collaboration diagram.

Related procedures

Creating a Communication

2.3.1 Collaboration

Element	Stereotype	Icon
Collaboration	«Collaboration» [Activity]	

A Collaboration element provides a description of several pools collaboration. This element is a container for a BPMN Collaboration diagram and its elements.

2.3.2 Pool and Lane

Element	Stereotype
Pool	«Pool» [ActivityPartition]
Lane	«Lane» [ActivityPartition]

A Pool represents a participant in a collaboration. The participant can be a specific partner entity, for example, a company, or it can be a more general partner role, for example, a buyer, seller, or manufacturer. Graphically, a Pool is a container to partition a process from other pools.

A Pool can contain a process (Figure 36), or it can be a “black box” (Figure 37).

Figure 36 -- Pool that May Contain a Process

Figure 37 -- Pool with Suppressed Contents

A Pool with suppressed contents will display a multiInstance marker if the participant referenced by a pool has a Minimum Multiplicity value of 2 or greater (Figure 38).

Figure 38 -- Pool with Suppressed Contents Referencing the MultiInstance Participant

A Lane is a sub-partition within a pool. Lanes are used to organize and categorize activities within a pool. They are often used in the internal roles, for example, Manager and Associate; systems, for example, an enterprise application; or internal departments, for example, shipping or finance.

In addition, Lanes can be nested or defined in a matrix. For example, there could be an outer set of Lanes for company departments and an inner set of Lanes for the roles within each department (Figure 39).

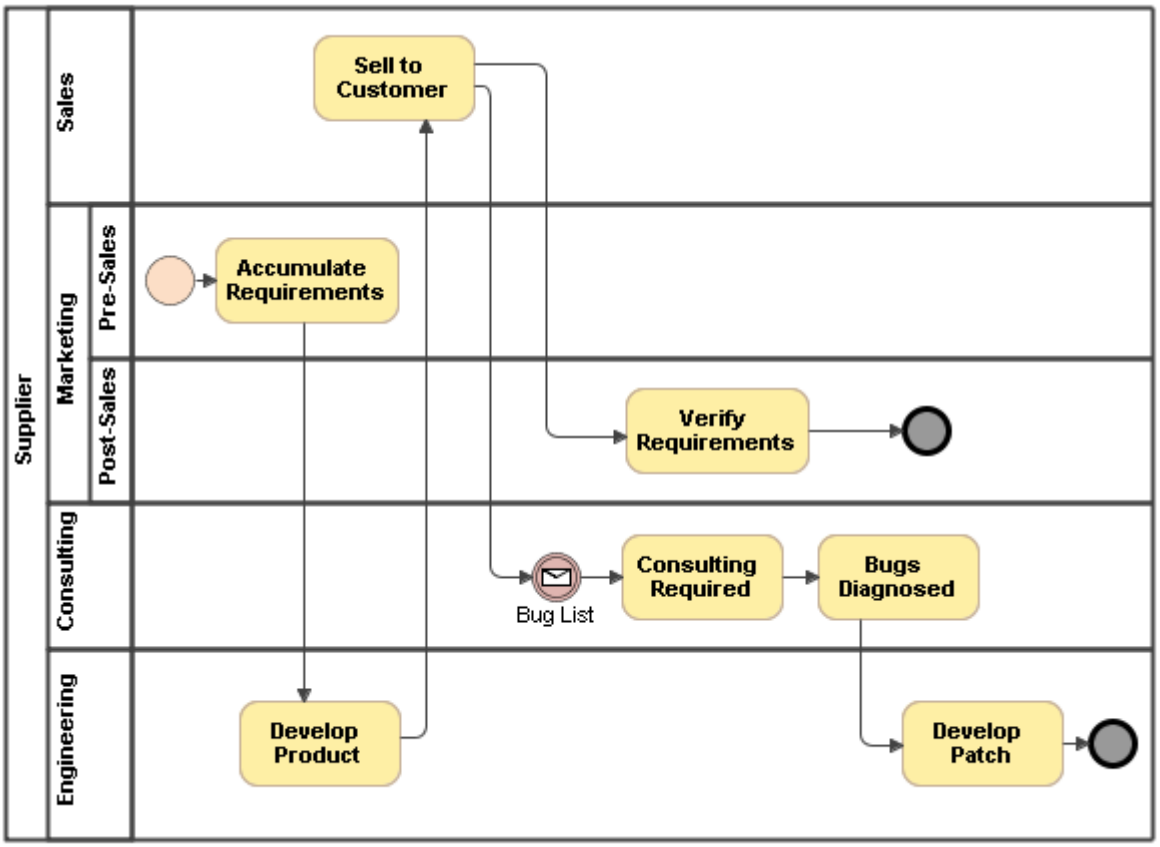


Figure 39 -- Pool with Nested Lanes

Related concepts

Participant

BPMN Process Diagram

2.3.3 Communication

Element	Stereotype	Icon
Communication	«Communication» [StructuredActivityNode]	

A Communication is an atomic element for a BPMN Collaboration diagram. It represents a set of message flows that are grouped together (Figure 40).

A Communication may involve two or more Participants. A Conversation Link path will be drawn from a communication to the involved Participants (Pools).

Figure 40 -- Communication Notation

Related procedures

Creating a Communication

Creating Pool and Lane

Related concepts

Participant

2.3.4 SubConversation

Element	Stereotype	Icon
SubConversation	«SubConversation» [StructuredActivityNode]	

A SubConversation is a conversation node, that is, the hierarchical division within a parent conversation.

A SubConversation is represented as a graphical object within a BPMN Conversation diagram (Figure 41), but it can also be “opened up” to show a lower-level conversation, which consists of message flows, communications, and/or other SubConversations. The SubConversation shares the participants of its parent conversation.

Figure 41 -- SubConversation Notation

Related procedures

Creating a SubConversation

Related concepts

Communication

2.3.5 Call Conversation

Element	Stereotype	Icon
Call Conversation	«CallConversation» [CallBehaviorAction]	

A Call Conversation identifies a place in the conversation where a Conversation is used (Figure 42).

Figure 42 -- Call Conversation Calling Conversation Delivery

Figure 43 -- Call Conversation that Does Not Call Any Conversation

Related concepts

Collaboration

2.3.6 Conversation Link

Element	Stereotype	Icon
Conversation Link	«ConversationLink» [Dependency]	

A Conversation Link allows for connecting conversation nodes (Communication, SubConversation, and Call Conversation) to and from Participants (Pools).

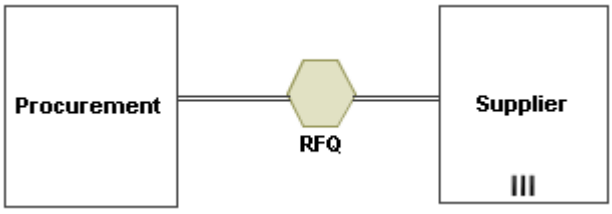


Figure 44 -- Conversation Link Notation

Related concepts

Collaboration
SubConversation
Call Conversation
Communication

2.4 BPMN Choreography Diagram

A Choreography formalizes the way business participants coordinate their interactions.

A Choreography is a type of process, but its purpose and behavior is different from a standard BPMN process. A standard process defines the flow of activities of a specific partner entity or organization. In contrast, a Choreography formalizes the way business participants coordinate their interactions. The focus is not on the work performed within these participants, but rather on the information (messages) exchanged between them.

A Choreography is a definition of expected behavior, basically a procedural business contract, between interacting participants. It shows the messages exchanged and their logical relation (Figure 45). This allows partners to plan their business processes for inter-operation without introducing conflicts.

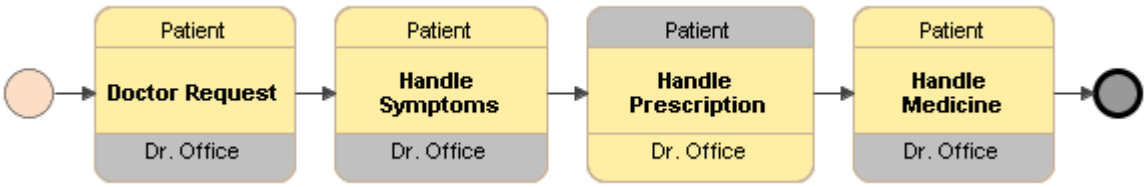


Figure 45 -- BPMN Choreography Diagram Example

BPMN Choreography diagrams are based on the UML Activity diagram and include restrictions and extensions as defined by BPMN.

A BPMN Choreography diagram contains the following elements:

- Choreography Activities (Choreography Task, SubChoreography, Call Choreography)
- Start Events
- Intermediate Events
- Boundary Events
- End Events
- Gateways
- Sequence Flow

The following sections will describe the elements, specific for the BPMN Choreography diagram.

Related procedures

BPMN Choreography Diagram Procedures

2.4.1 Choreography

Element	Stereotype	Icon
Choreography	«Choreography» [Activity]	

A Choreography is a container for a BPMN Choreography diagram and its elements.

2.4.2 Choreography Activities

Element	Stereotype	Icon
Choreography Activity	*«ChoreographyActivity»*	n/a

A Choreography Activity is an abstract element. It represents a point on a choreography flow where an interaction occurs between two or more participants.

There are three types of Choreography activities defined in business process modeling:

2.4.2.1 Choreography Task

2.4.2.2 SubChoreography

2.4.2.3 Call Choreography

The shape of a Choreography Task, SubChoreography, or Call Choreography consists of two or more participant compartments and one name compartment (Figure 46). One of the participants can be selected as an initiating participant. The color of the initiating participant compartment is the same as the color of the name compartment. The other participants compartments are gray.

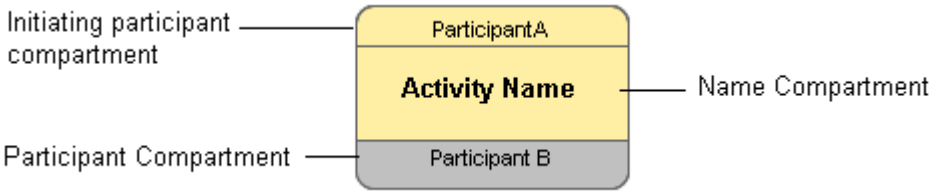


Figure 46 -- Compartments on Choreography Activity Shape

The looping properties of Choreography Activities can be specified: they can be repeated sequentially, essentially behaving like a loop. The presence of loop characteristics signifies that the Choreography Activity has looping behavior. There are two types of Looping characteristics defined in BPMN:

(a) Standard Loop

(b) MultiInstance Loop

Table 9 -- Characteristics of Standard and MultiInstance Loops

Characteristics	Stereotype	Marker
Standard Loop	«StandardLoopCharacteristics» [CallBehaviourAction, OpaqueAction, StructuredActivityNode]	
MultiInstance Loop	«MultiInstanceLoopCharacteristics» [CallBehaviourAction, OpaqueAction, StructuredActivityNode]	Non-sequential Sequential

(a) Standard Loop

A Standard Loop marker displayed on a Choreography Activity shape name compartment shows that the looping behavior based on a boolean condition is defined for this activity (Figure 47). Additional looping characteristics can also be defined: the activity will loop as long as the boolean condition is true. The condition is evaluated for every loop iteration, and can be evaluated at the beginning or end of the iteration. In addition, a numeric cap can be optionally specified. The number of iterations cannot exceed this cap.

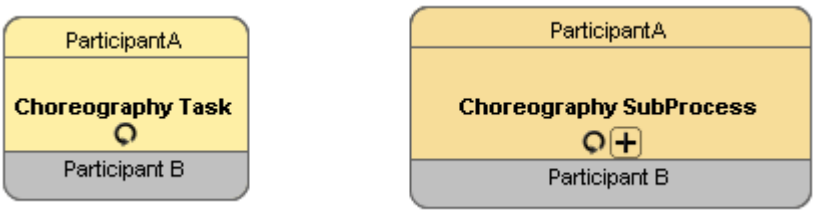


Figure 47 -- Chorepography Task and SubChoreography with a Standard Loop Marker

(b) MultiInstance Loop

A MultiInstance Loop marker shows that a desired number of Choreography Activity instances can be created. The instances can be executed either in parallel (Figure 48) or sequential (Figure 49), each has a different marker.

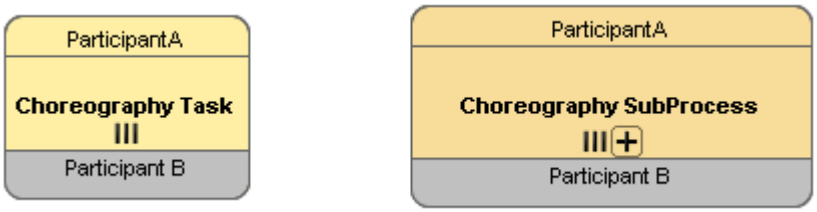


Figure 48 -- Choreography Task and SubChoreography with a Parallel MultiInstance Loop Marker

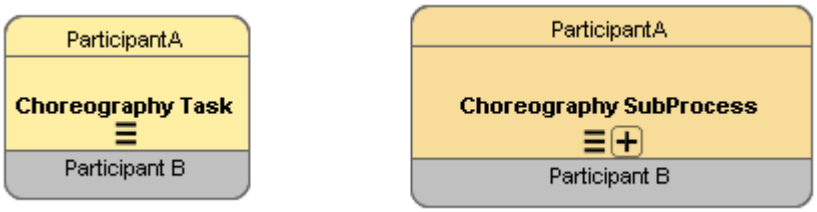


Figure 49 -- Choreography Task and SubChoreography with a Sequential MultiInstance Loop Marker

IMPORTANT	The MultiInstance Loop and Standard Loop markers can be added to all types of Choreography activities.

There are circumstancves when a Choreography Activity references a multi-instance participant (the minimum multiplicity property value for a participant is 2 or greater). A multi-instance participant represents a situation where there are more than one possible related participants that can be involved in the choreography. If this is the case, a MultiInstance marker will be displayed in the participant compartment of a choreography activity shape.

Related procedures

Creating Choreography Activity

Creating Participants

Related concepts

Participant

2.4.2.1 Choreography Task

Element	Stereotype	Icon
Choreography Task	«ChoreographyTask» [Opaque-Action]	

A Choreography Task is an atomic activity in a choreography process. It represents one or more messages exchanged between two Participants (Figure 50).

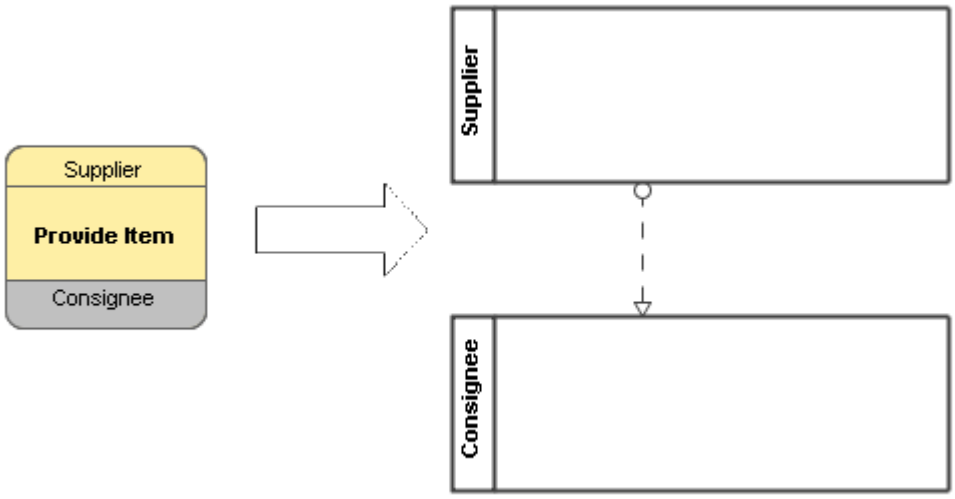


Figure 50 -- Choreography Task and BPMN Collaboration Diagram Corresponding to the Choreography Task

A Choreography Task can display messages that are defined by the referenced Message Flows. The messages connected to an Initiating Participant compartment are white and those connected to a Non-Initiating Participant compartment are gray (Figure 51).

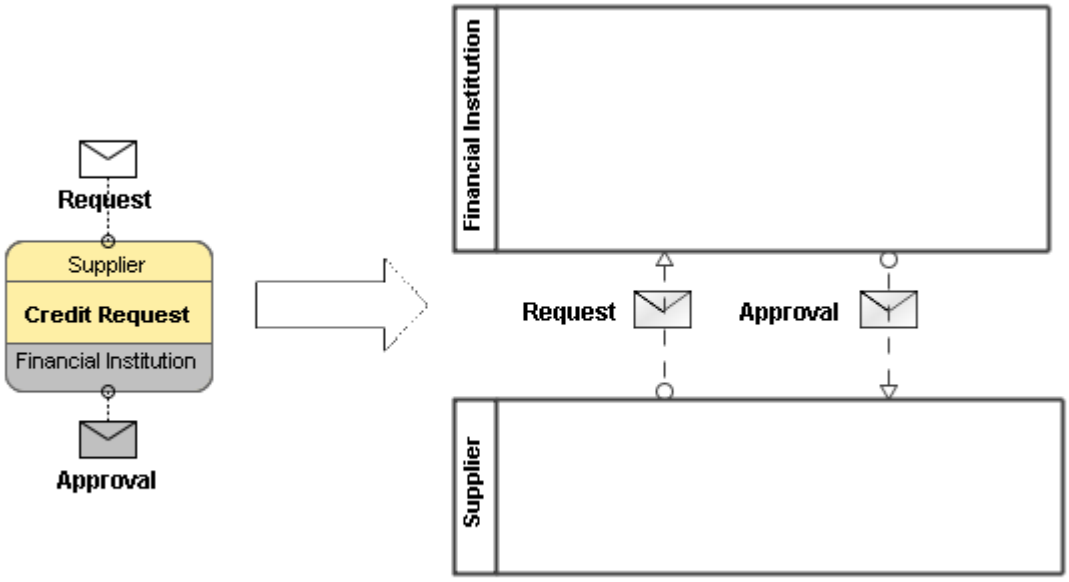


Figure 51 -- Choreography Task with Messages and BPMN Collaboration Diagram Corresponding to the Choreography Task

Related procedures

Creating a Choreography Task

Related concepts

Participant

BPMN Collaboration Diagram

Sequence Flow

2.4.2.2 SubChoreography

Element	Stereotype	Icon
SubChoreography	«SubChoreography» [StructuredActivityNode]	

A SubChoreography is a compound activity that can include choreography activities and define their flows (Figure 52). It can be expanded to show its details within the choreography in which it is contained.

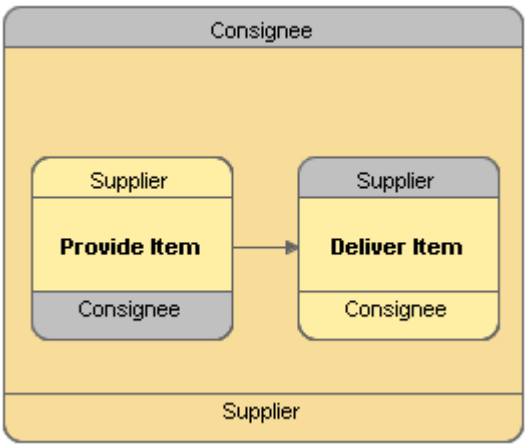


Figure 52 -- Expanded SubChoreography

It can also be displayed in a collapsed view to hide its details. A collapsed SubChoreography is indicated with a plus sign (+) to distinguish it from a Choreography Task (Figure 53).

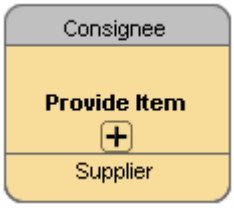


Figure 53 -- Collapsed SubChoreography

Related concepts

Participant
Events
Gateways
Sequence Flow

2.4.2.3 Call Choreography

Element	Stereotype	Icon
Call Choreography	«CallChoreography» [CallBehaviorAction]	

A Call Choreography identifies the point in a process where a global choreography is used. It acts as a place holder for the inclusion of a choreography element it is calling. A Call Choreography is drawn with a thick border (Figure 54).

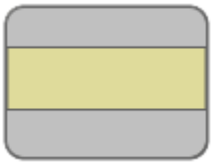


Figure 54 -- Call Choreography Notation

A Call Choreography referencing another Choreography is marked with a plus sign (Figure 55).

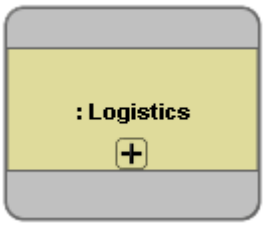


Figure 55 -- Call Choreography Referencing Another Choreography

Related procedures

Creating a Call Choreography

Related concepts

Choreography

2.5 Validation Rules

Cameo Business Modeler has the functionality to check if the created BPMN model corresponds to the most important modeling rules defined in the Business Modeling and Notation (BPMN) standard.

Cameo Business Modeler provides three validation suites to validate BPMN models:

2.5.1 BPMN 2.0 Correctness (Active) Validation Rules suite. The active BPMN 2.0 validation in MagicDraw instantly checks the most important correctness rules of a BPMN 2.0 model, displays errors in the model, and suggests solutions.

2.5.2 BPMN 2.0 Correctness Validation Rules suite is included to all BPMN 2.0 projects. You may run this suite to verify if a BPMN 2.0 model has been created correctly. This suite verifies a bigger set of correctness rules than the active validation rules set does.

2.5.3 BPMN2 Completeness Validation Rules suite is included in all of the BPMN 2.0 projects. You may run this suite to verify if a BPMN 2.0 model is fully specified.

2.5.1 BPMN 2.0 Correctness (Active) Validation Rules

Table 10 describes the BPMN correctness (active) validation rules defined in Cameo Business Modeler for BPMN 2.0 projects.

Table 10 -- BPMN 2.0 Correctness (Active) Validation Rules

Validation rule	Severity
A Sequence Flow cannot connect the elements inside a SubProcess to the elements outside the SubProcess.	Error
A Message Flow must connect two separate Pools or elements from separate pools.	Error
A Conversation Link shall be drawn either from Participant to Communication, SubConversation, or CallConversation, or from Communication, SubConversation, or CallConversation to Participant.	Error
An Ad Hoc SubProcess may not have a Start Event.	Warning
An Ad Hoc SubProcess may not have an End Event.	Warning
A Message Start Event cannot be used in a Choreography diagram.	Error
An Error Start Event cannot be used in a Choreography diagram.	Error
An Error Boundary Event cannot be used in a Choreography diagram.	Error
A Message End Event cannot be used in a Choreography diagram.	Error
An Error End Event cannot be used in a Choreography diagram.	Error
An Escalation End Event cannot be used in a Choreography diagram.	Error
A Cancel End Event cannot be used in a Choreography diagram.	Error
A Signal End Event cannot be used in a Choreography diagram.	Error

A Multiple End Event cannot be used in a Choreography diagram.	Error
A Compensation End Event cannot be used in a Choreography diagram.	Error
A Sequence Flow cannot cross the Pool Boundary.	Error

2.5.2 BPMN 2.0 Correctness Validation Rules

Table 11 shows the BPMN 2.0 validation rules included in the BPMN 2.0 Correctness validation rules suite:

Table 11 -- BPMN 2.0 Correctness Validation Rules

Validation rule	Severity
A Message Flow cannot connect the elements inside a SubProcess to the elements outside the SubProcess.	Error
An Event SubProcess cannot have any incoming or outgoing Sequence Flow.	Warning
An Ad Hoc SubProcess cannot have a Call Choreography.	Warning
An Ad Hoc SubProcess cannot have a SubChoreography.	Warning
An Ad Hoc SubProcess cannot have Conversations.	Warning
A Converging Gateway should not have more than one outgoing Sequence Flow.	Info
A Diverging Gateway should not have more than one incoming Sequence Flow.	Info
The Participant multiplicity minimum value must be 0 for an unspecified multiplicity or >=2 when the multiplicity minimum value is specified.	Warning
The Participant multiplicity maximum value must be 0 for an unspecified multiplicity or >=2 when the multiplicity maximum value is specified.	Warning
The Activity start quantity shall be one (1) or greater.	Warning
The Activity completion quantity shall be one (1) or greater.	Warning
A Data Input cannot have an incoming Data Association.	Warning
A Data Output cannot have an outgoing Data Association.	Warning
A Data Output cannot have an incoming Sequence Flow.	Warning
A Condition cannot be specified for an outgoing Sequence Flow from a Start Event.	Info
Only Messages and Multiple Start Events can have incoming Message Flows.	Warning
Only Multiple Start Events can have multiple incoming Message Flows.	Warning

Validation rule	Severity
A Cancel Event can only be attached to the Transaction SubProcess boundary.	Warning
An Intermediate Boundary Event cannot have an incoming Sequence Flow.	Warning
A Compensation Boundary Event cannot have an outgoing Sequence Flow.	Warning
A Link Intermediate Event can have either an incoming or outgoing Sequence Flow, it cannot have both.	Warning
A Compensation Start Event should not be used for a top-level Process.	Info
A Cancel End Event can only be used within a Transaction SubProcess.	Warning
A None Start Event cannot be used for an Event Sub-Process.	Warning
A default Sequence Flow should not have a conditionExpression.	Warning
A Sequence Flow outgoing from an Event Gateway should not have a conditionExpression.	Info
A Message Boundary Event cannot be attached to a SubChoreography.	Warning
A Message Boundary Event cannot be attached to a Call Choreography.	Warning
A Non-Interrupting Start Event can only be used inside an Event SubProcess.	Warning

2.5.3 BPMN2 Completeness Validation Rules

Table 12 shows the BPMN 2.0 validation rules included in the BPMN 2.0 Completeness validation suite.

Table 12 -- BPMN 2.0 Completeness Validation Rules

Validation rule	**Severity**
An Intermediate Boundary Event should have an outgoing Sequence Flow.	Info
An Intermediate Event should have an incoming or outgoing Sequence Flow.	Info
An Error Code should be specified for an Error End Event.	Info
An Event Based Gateway should have two or more outgoing Sequence Flows.	Info
An Event SubProcess must have one Start Event.	Warning
An Event SubProcess shall have one Start Event.	Warning
A Start Event shall have at least one outgoing Sequence Flow.	Warning
An Intermediate Event can have either an incoming or outgoing Message Flow, it cannot have both.	Warning

2.6 Exporting Models in XPDL Format

XML Process Definition Language (XPDL) is a serialization format for BPMN. XPDL provides a file format that supports all BPMN process definition description properties. It defines a description of both model element properties and graphical descriptions of the diagram. With XPDL, Cameo Business Modeler can export process definition for other products to read it and allow you to exchange your model with other tools to perform further model simulation, execution, or deployment.

MagicDraw supports export of BPMN models to XPDL Version 2.2. This version is backward compatible with previous versions of XPDL and can be used to export BPMN 2.0 and BPMN 1.x models.

Related procedures

Exporting Models to XPDL

3 PROCEDURES

This chapter provides the main procedures of Cameo Business Modeler and contains the following sections:

3.1 Common BPMN Elements Procedures

Common BPMN elements are those that can be used in more than one type of BPMN diagrams, for example, Process, Collaboration, Conversation, and Choreography diagrams. The following sections will describe how to create and specify those elements and their properties.

3.1.1 Specifying Element IDs

.

Most of the elements in the BPMN specification have their element IDs. IDs of the elements (in gray) are displayed in the following places:

- In a diagram: the ID is displayed above,or before the element name.
- In the model browser: the ID is displayed in front of the element name.
- In the Specification dialog before the Numbered property .

To specify a BPMN element ID:

- Open the element Specification dialog and type an ID number in the ID property text box (Figure 56).

Figure 56 -- Element ID Property Field

To hide or display an element ID in a BPMN 2.0 diagram, either:

- Right-click an element in the BPMN 2.0 diagram and clear or select **Show Elements Id**, or
- Right-click an element in the BPMN 2.0 diagram and click **Diagram Properties**, and then clear or select the **Show Elements Id** check box.

3.1.2 Creating BPMN Elements in the Model Browser

Some of the BPMN elements will not be represented in the BPMN diagrams and need to be created in the model browser, Containment tree. These elements will be used as the data types for specifying the values of the business modeling element properties.

To create a BPMN element in the Containment tree:

- Open the package shortcut menu in the Containment tree and click **New Element** > **BPMN Element**, and then select a BPMN element that you want to create (Figure 57).

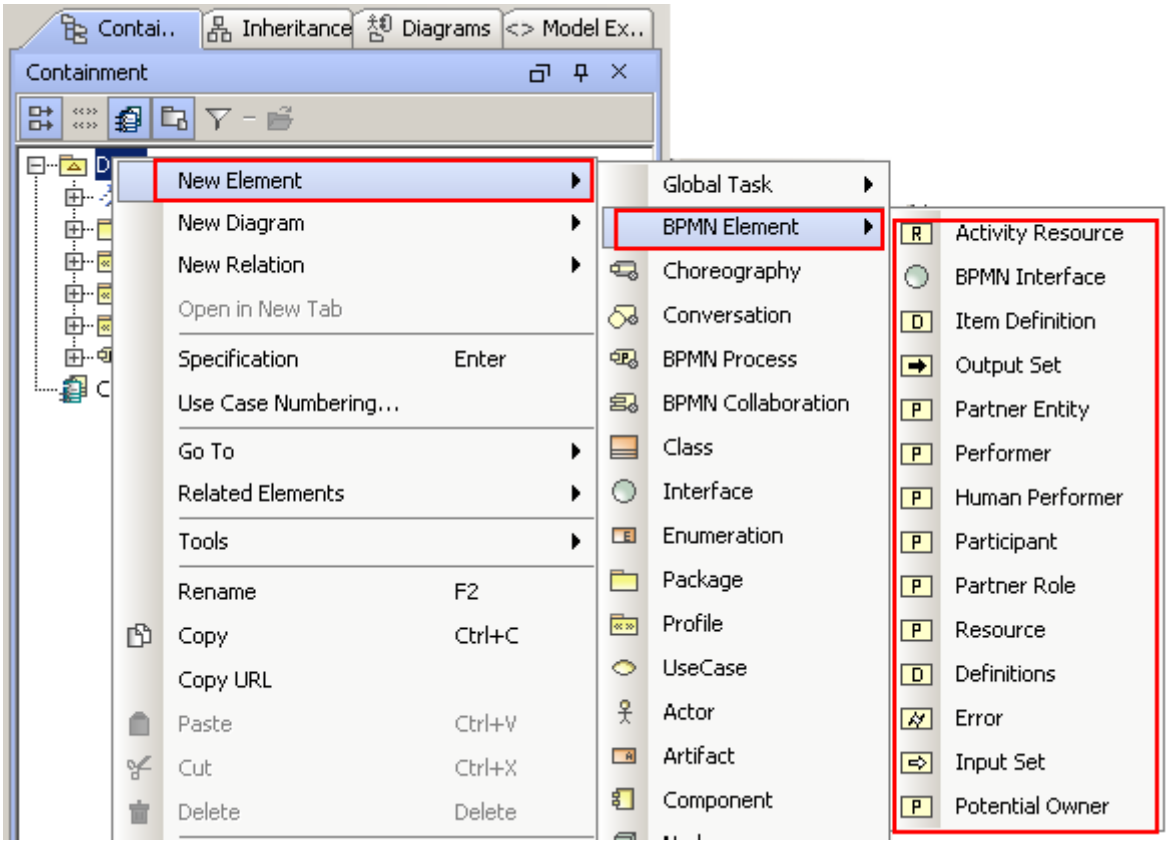


Figure 57 -- Creating a BPMN Element in the Containment Tree

Related concepts

Common BPMN 2.0 Elements

3.1.3 Creating Participants

You can create a Participant inside a package. The participant will not be displayed in a BPMN 2.0 diagram as it is represented by a Pool and Choreography Task. A Participant is called mutiInstance if its Minimum Multiplicity value is equal or more than two.

To create a participant in a Containment tree:

- Open the package shortcut menu in the Containment tree and click **New Element** > **BPMN Element** > **Participant**.

To create a multiInstance participant:

- Open the participant Specification dialog and type the value (two or greater) in the **Minimum** property text box (Figure 58).

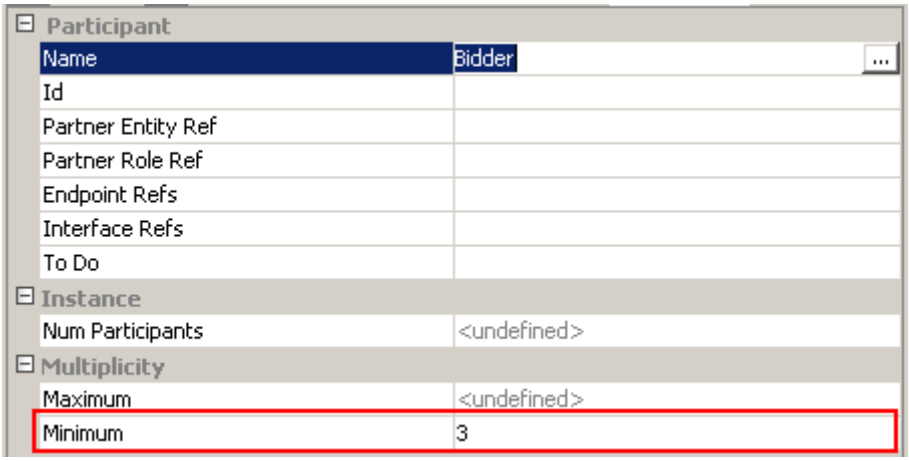


Figure 58 -- Specifying the Minimum Multiplicity Value of a MultiInstance Participant

To review traceability information related to a Participant:

- Open the Participant Specification dialog and select **Traceability** (Figure 59).

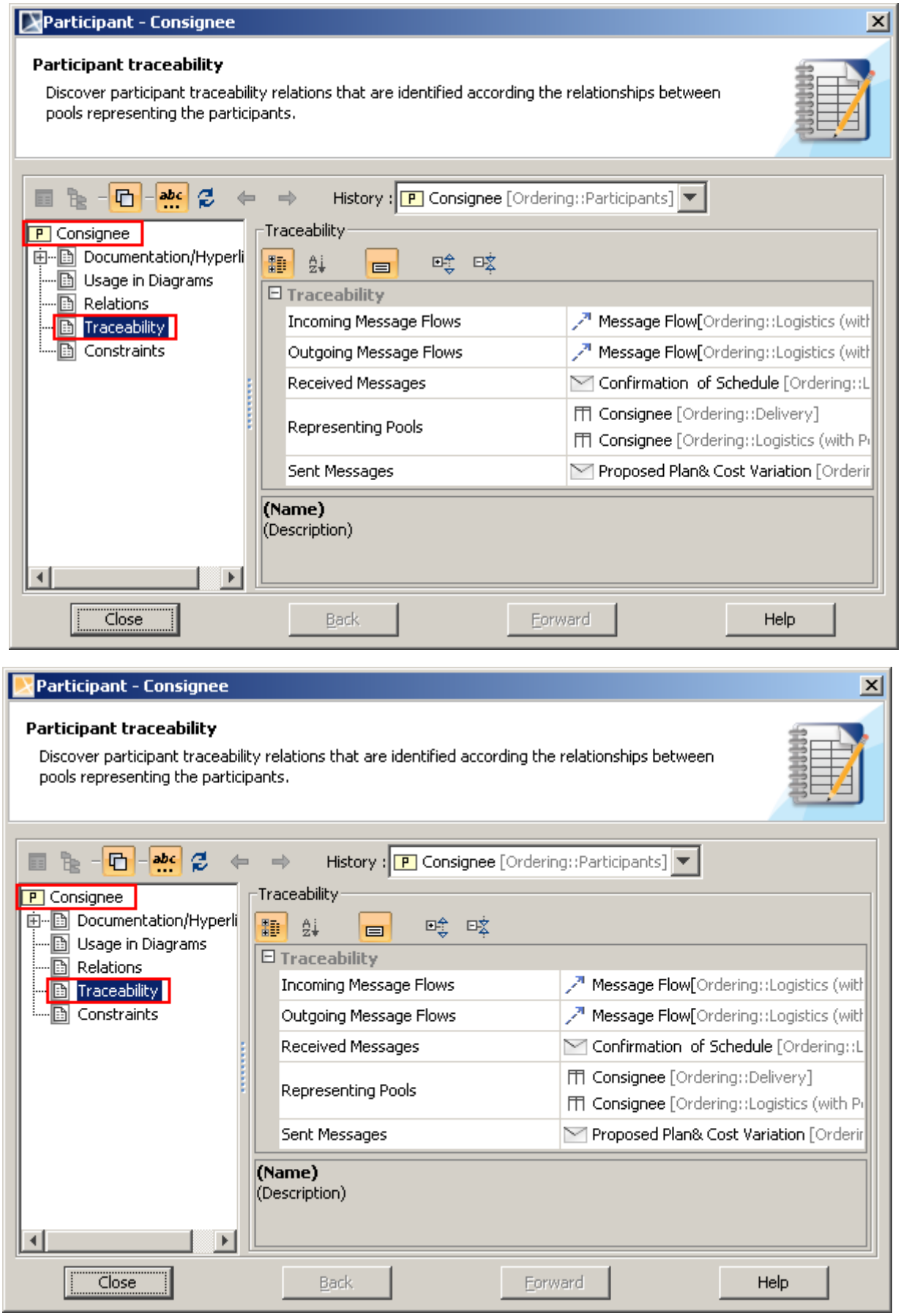


Figure 59 -- Traceability Information of Participant

Related concepts

Participant

3.1.4 Creating a Sequence Flow

A Sequence flow connects activities, choreography activities, events, and gateways. A Conditional sequence flow has a condition expression, and is drawn with a mini diamond marker at the beginning of the Sequence Flow.

A default sequence flow is indicated with a backslash at the beginning of the Sequence Flow.

To create a Conditional Sequence Flow:

1. Select a Sequence Flow in a diagram and type the condition expression inside the brackets (Figure 60).
2. Click on an empty space in the diagram.

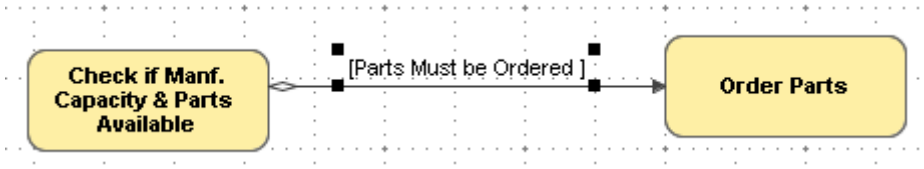


Figure 60 -- Creating a Conditional Sequence Flow

3. Open the Sequence Flow Specification dialog and type the expression in the **Condition Expression** property text box (Figure 61).

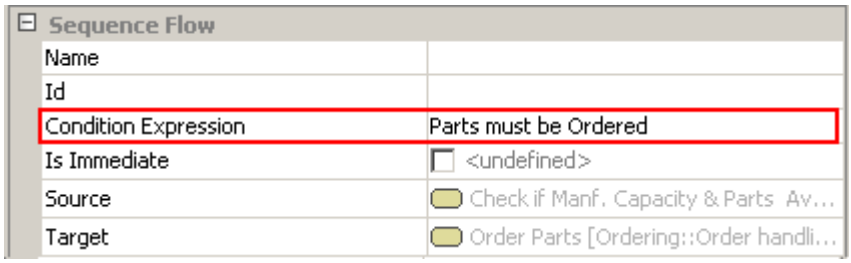


Figure 61 -- Defining the Condition Expression Property

4. Click **Submit**.

NOTE	An outgoing Conditional Sequence Flow from a gateway is displayed without a mini diamond marker.

To make a default Sequence Flow:

1. Select a Sequence Flow in a diagram and click the **Make Default** button on the Smart Manipulator toolbar (Figure 62).

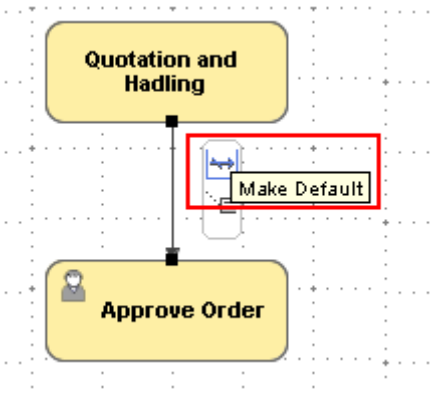


Figure 62 -- Make Default Button

TIP	Click the **Make Default** button to make a default Sequence Flow non-default.

2. Open the sequence flow source element, for example, task, Specification dialog, and select Sequence Flow from the **Default** property list. The Sequence Flow will be marked as a default one.

IMPORTANT	A default Sequence Flow can be specified for activities (tasks, subprocesses, and call activity) or exclusive, inclusive, and complex gateways.

NOTE	A default sequence flow should not have a condition expression.

Related concepts

Sequence Flow

3.1.5 Creating an Event

This section will describe how to create and specify events in the BPMN diagrams.

To draw an Event:

- On the **Process Diagram** toolbar, click the **None Start Event**, **None Catching Intermediate Event**, **Message Throwing Intermediate Event**, or **None End Event** arrow button to open the submenu (Figure 63), and select a type of Event.

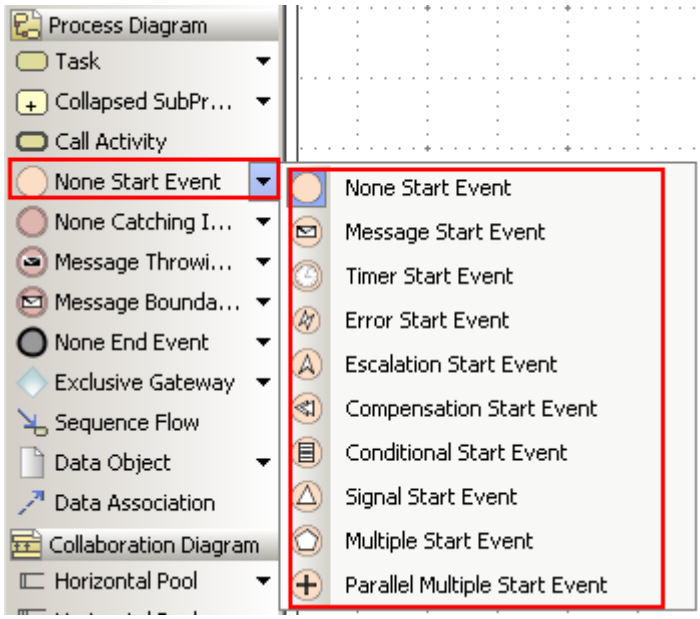


Figure 63 -- Selecting an Event

To draw a Boundary Event:

1. On the **Process Diagram** toolbar, click the **Message Boundary Event** arrow button, and select a type of Boundary Event.
2. Click an Activity or Choreography Activity in a diagram.

To change an Event type:

- Open the Event shortcut menu and select a new Event type (Figure 64).

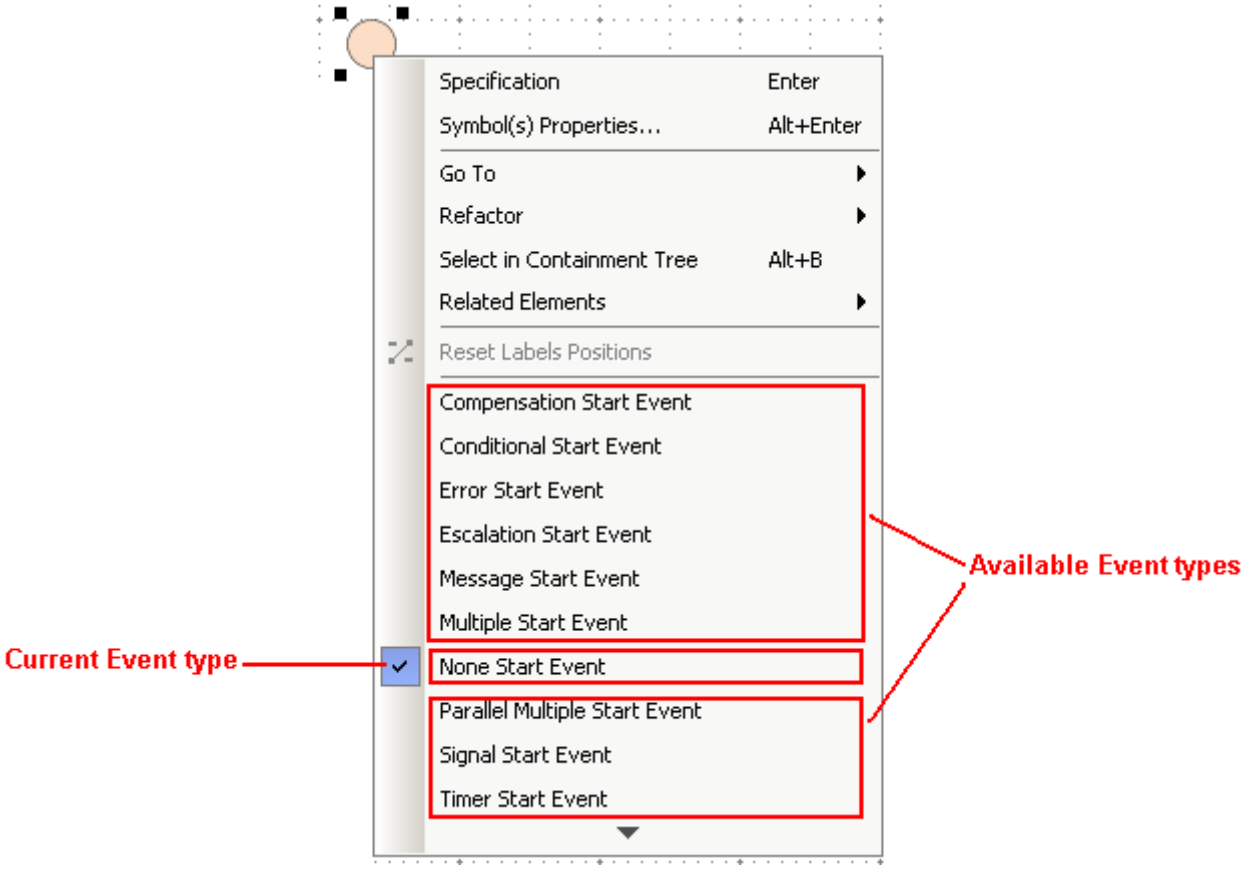


Figure 64 -- Event Shortcut Menu

NOTE	You can change an Event type for Start, Intermediate, Boundary, or End Events.

To create a non-interrupting Start Event, either:

- Open the Start Event shortcut menu and click **Is Interrupting** > **False**, or
- Open the Start Event Specification dialog, select **Is Interrupting** > **False** (Figure 65), and then click **Close**.

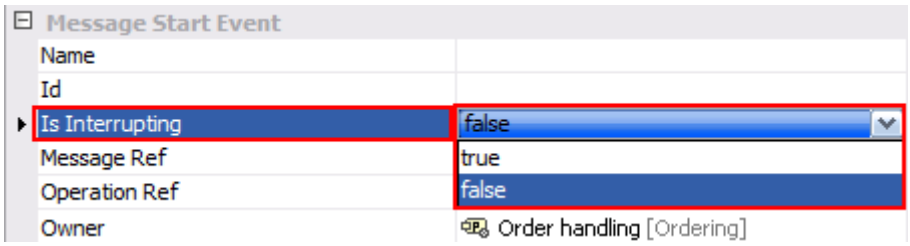


Figure 65 -- Creating a Non-Interrupting Start Event

IMPORTANT	Not all Start Event types can be created as non-interrupting. The command **Is Interrupting** is only available for the following Start Event types: • Message Start Event • Timer Start Event • Escalation Start Event • Conditional Start Event • Signal Start Event • Multiple Start Event • Parallel Multiple Start Event

To make a Boundary Event non-interrupting, either:

- Open the Boundary Event shortcut menu and click **Cancel Activity** > **False**, or
- Open the Boundary Event Specification dialog, select **Cancel Activity** > **False** (Figure 66), and then click **Close**.

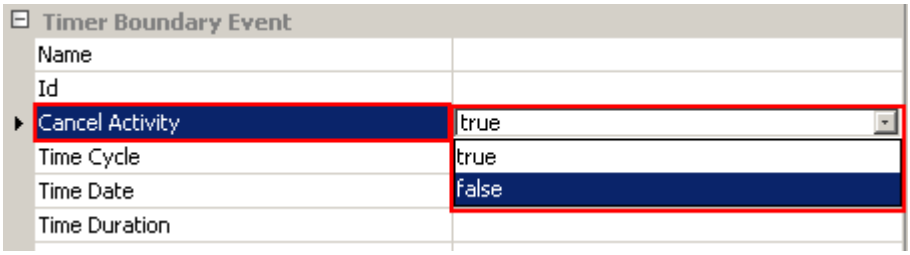


Figure 66 -- Creating a Non-Interrupting Boundary Event

IMPORTANT	Not all Boundary Event types can be created as non-interrupting. The command **Cancel Activity** is available for the following Boundary Event types: • Message Boundary Event • Timer Boundary Event • Escalation Boundary Event • Conditional Boundary Event • Signal Boundary Event • Multiple Boundary Event • Parallel Multiple Boundary Event

Related concepts

Events

Activities

Choreography Activities

3.2 BPMN Process Diagram Procedures

This section will describe how to create and specify a BPMN Process diagram.

NOTE	A BPMN Process diagram may also contain the elements of a BPMN Collaboration diagram.

Related concepts

BPMN Process Diagram

Related procedures

3.3 BPMN Collaboration Diagram Procedures

3.2.1 Creating a BPMN Process Diagram

You can create a BPMN Process diagram by using the (i) main toolbar, (ii) main menu, or (iii) shortcut menu in the Containment tree.

(i) To create a new BPMN diagram by using the main toolbar:

1. Click the **BPMN Process Diagram** icon on the BPMN 2.0 main toolbar (Figure 67). The **Create Diagram** dialog will open.

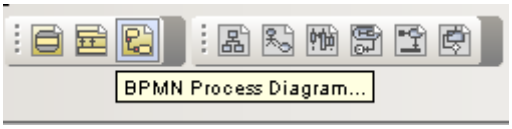


Figure 67 -- BPMN Process Diagram Icon on the Main Toolbar

2. Type the name and select the owner of the BPMN Process diagram, and then click **OK**.

(ii) To create a new BPMN diagram by using the main menu:

1. On the main menu, click **Diagrams** > **BPMN2 Diagrams** > **BPMN Process Diagrams**. The **BPMN Process Diagrams** dialog will open.
2. Click the **Add** button. The **Create Diagram** dialog will open.
3. Type the name and select the owner of the BPMN Process diagram, and then click **OK**.

(iii) To create new BPMN diagram from the shortcut menu in the Containment tree:

1. Right-click a package in the Containment Tree to open the shortcut menu and click **New Diagram** > **BPMN2 Diagrams** > **BPMN Process Diagram**.
2. Type the name for a created BPMN Process diagram.

IMPORTANT!	You can create a BPMN Process diagram only from the Business Modeler, Business Analyst, and Full Featured user perspectives.

Related concepts

BPMN Process Diagram

3.2.2 Managing Activities

This section will describe how to create and specify activities in a BPMN process diagram. Activities (Tasks, Subprocesses, and Call Activities) may have the following specific markers displayed on their shapes:

- Compensation
- Standard loop
- MultiInstance loop (parallel)
- MultiInstance loop (sequential)

To add a Compensation marker to an activity, either:

- Open the activity shortcut menu and select the **Is For Compensation** check box, or
- Open the activity Specification dialog, select **Is For Compensation** > **false** (Figure 68), and then click **Close**.

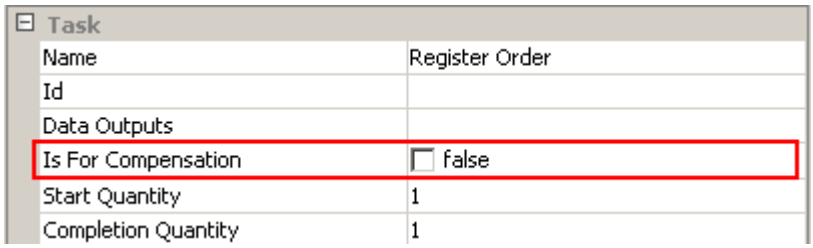


Figure 68 -- Adding a Compensation Marker to an Activity

To add a Standard Loop marker to an activity:

- Open the activity shortcut menu and select the **Standard Loop** check box.

To add a MultiInstance Loop (parallel) marker to an activity:

- Open the activity shortcut menu and select the **MultiInstance Loop** check box.

To display a MultiInstance Loop (sequential) marker on a MultiInstance Loop activity, either:

- Right-click an activity with a MultiInstance Loop (parallel) marker to open its shortcut menu, and select the **Is Sequential** check box, or
- Open an activity with the MultiInstance marker Specification dialog, select **Is Sequential** > **false** (Figure 69), and then click **Close**.

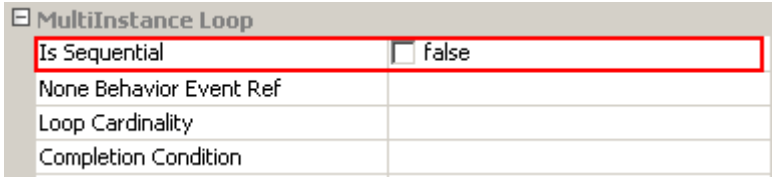


Figure 69 -- Displaying MultiInstance Loop Marker on a MultiInstance Loop Activity

To convert an Activity to another type of Activity:

- Open the Task, SubProcess, or Call Activity shortcut menu, click **Refactor** > **Convert To**, and select an activity type (Figure 70).

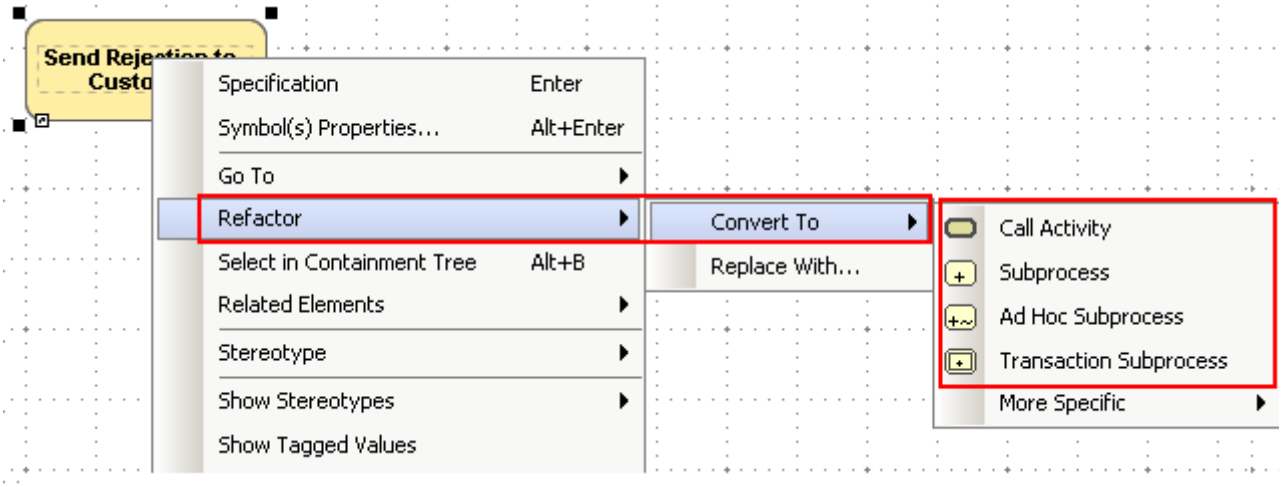


Figure 70 -- Converting Activity Type

Related concepts

Activities

3.2.3 Creating Tasks

There are multiple types of Tasks that you can create in a BPMN Process diagram.

To draw a task:

- On the **Process Diagram** toolbar, click the **Task** arrow button and select a type of Task (Figure 71).

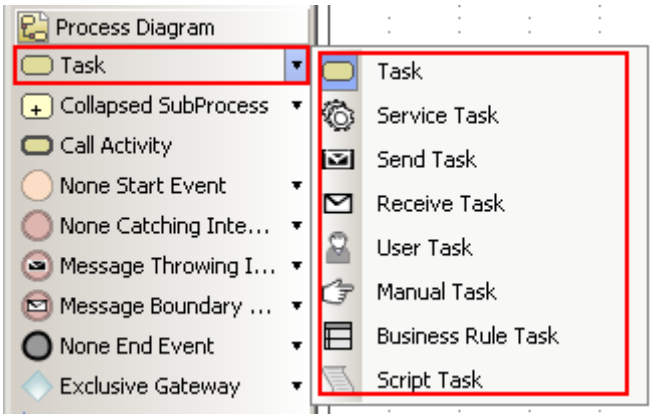


Figure 71 -- Selecting a Type of Task

To change a task type:

- Open the Task shortcut menu and select a new Task type (Figure 72).

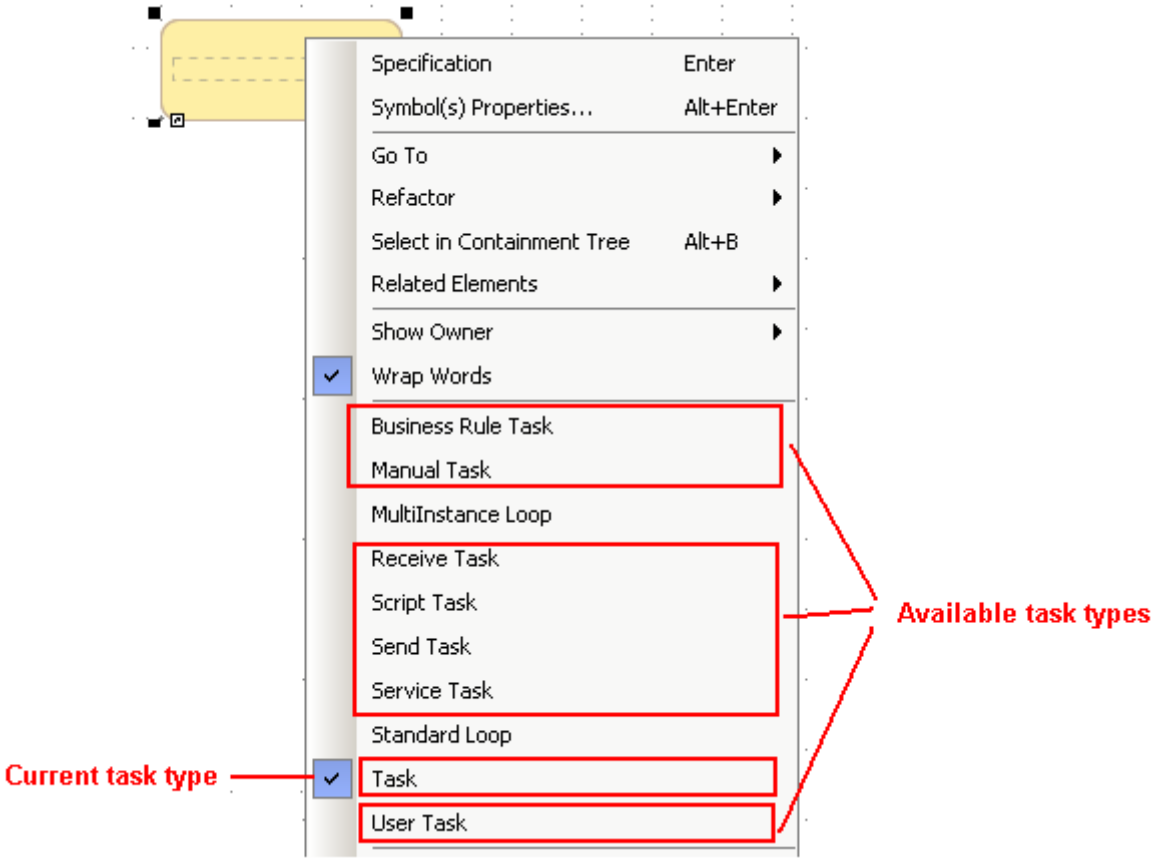


Figure 72 -- Task Shortcut Menu

Related concepts

Task

3.2.4 Managing SubProcesses

A BPMN diagram may display subprocesses with different symbol properties:

- An expanded SubProcess can contain inner shapes.
- A collapsed SubProcess cannot display inner shapes. A plus sign (+) marker will be displayed for a collapsed subprocess.

If the property of a SubProcess, **Is Triggered By Event** = true, it will be called an Event SubProcess and drawn with a dashed border.

There are two specific types of SubProcesses:

(i) A Transaction SubProcess: drawn with a double border.

(ii) An AdHoc SubProcess: drawn with an AdHoc marker on its shape.

To draw an expanded SubProcess:

- On the **Process Diagram** toolbar, click the **Collapsed SubProcess** arrow button and select **Expanded SubProcess** (Figure 73).

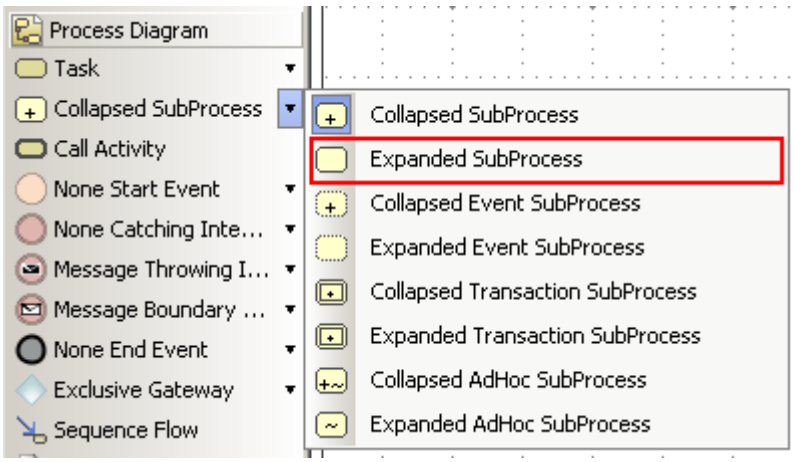


Figure 73 -- Expanded SubProcess Option on the Process Diagram Toolbar

To draw a collapsed SubProcess:

- On the **Process Diagram** toolbar, click **Collapsed SubProcess** > **Collapsed SubProcess**.

To convert a collapsed SubProcess from/to an expanded SubProcess, either:

- Open the SubProcess shape shortcut menu and select or clear the **Suppress Content** check box, or
- Open the expanded SubProcess shape shortcut menu, click **Symbol Properties** and select or clear the **Suppress Content** check box.

To draw an event SubProcess:

- On the **Process Diagram** toolbar, click the **Collapsed SubProcess** arrow button and select **Collapsed Event SubProcess** or **Expanded Event SubProcess** (Figure 74).

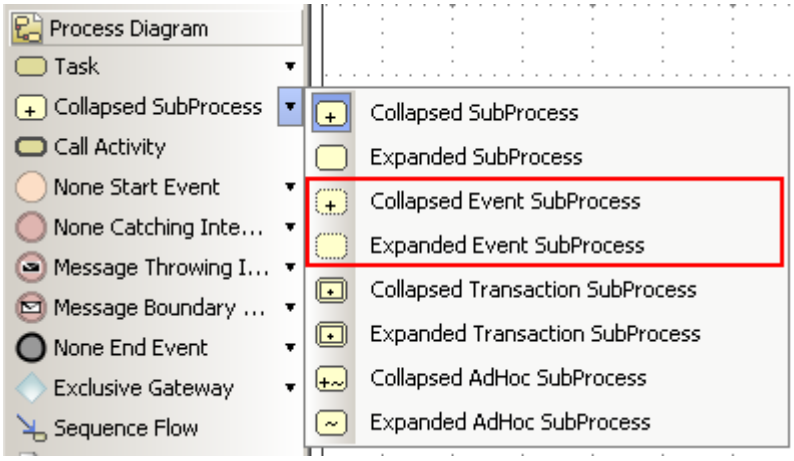


Figure 74 -- Selecting an Event Subprocess

To draw a Transaction SubProcess:

- On the **Process Diagram** toolbar, click the **Collapsed SubProcess** arrow button and select **Collapsed Transaction SubProcess** or **Expanded Transaction SubProcess** (Figure 75).

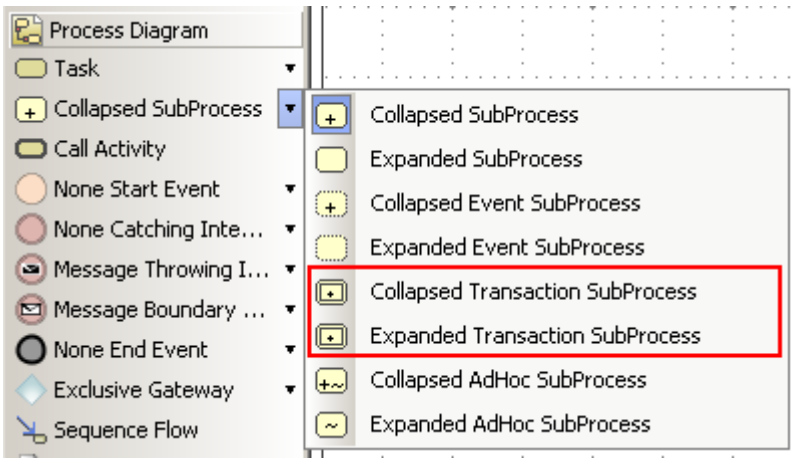


Figure 75 -- Selecting a Transaction Subprocess

To draw an AdHoc SubProcess:

- On the **Process Diagram** toolbar, click the **Collapsed SubProcess** arrow button and select **Collapsed AdHoc SubProcess** or **Expanded AdHoc SubProcess** (Figure 76).

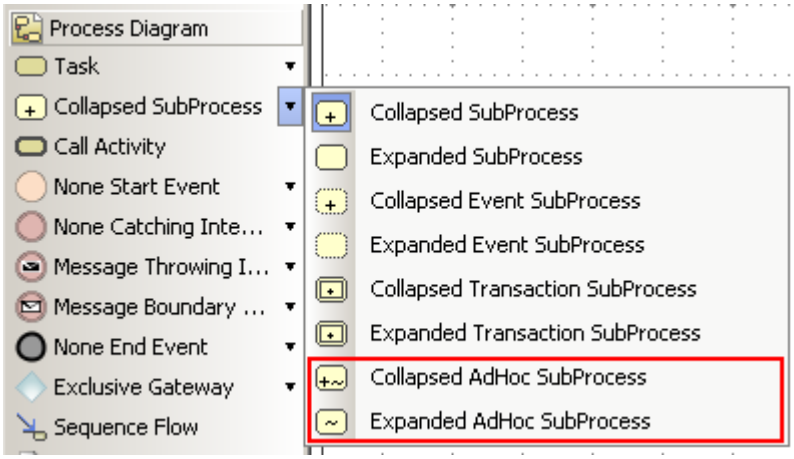


Figure 76 -- Selecting an AdHoc Subprocess

To mark a created SubProcess as an event SubProcess, either:

- Open any SubProcess shortcut menu and select the **Triggered By Event** check box, or
- Open any SubProcess Specification dialog and select the **Triggered By Event** check box on the SubProcess properties list (Figure 77).

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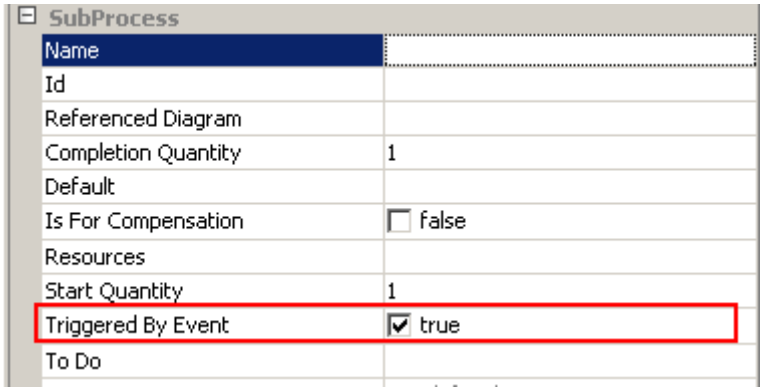


Figure 77 -- Marking Subprocess as Event Subprocess

To convert a SubProcess to a Transaction SubProcess or AdHoc SubProcess:

- Open the SubProcess shortcut menu and click **Refactor** > **Convert To** > **More Specific** > **AdHoc SubProcess** or **Transaction**.

To convert a Transaction SubProcess or AdHoc SubProcess to a simple SubProcess:

- Open the Ad Hoc SubProcess or Transaction SubProcess shortcut menu and click **Refactor** > **Convert To** > **More General** > **AdHoc SubProcess** or **Transaction**.

To display a Start Event icon on a suppressed Event SubProcess:

1. Draw an expanded Event SubProcess.
2. Draw a Start Event to the Event SubProcess.
3. Open the SubProcess shortcut menu and select the **Suppress Content** checkbox.

Related concepts

SubProcess

3.2.5 Creating Data Items

You can create the following data items in a BPMN process diagram:

- Data Object
- Data Store
- Data Input
- Data Output

You can indicate a Data Object as a collection and connect a Data Item to other elements of the BPMN Process diagram by using a Data Association.

To draw a data item:

- On the **Process Diagram** toolbar, click the **Data Object** arrow button and select **Data Object**, **Data Store**, **Data Input**, or **Data Output** (Figure 78).

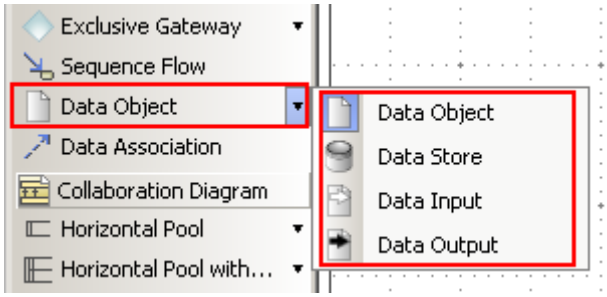


Figure 78 -- Drawing a Data Item

To create a new Data Object typed by a classifier:

- Select a classifier in the Containment tree and drag it to a BPMN Process or BPMN Collaboration diagram.

To mark a Data Object as a collection, either:

- Open the Data Object shortcut menu and select **Is Collection** > **true**.
- Open the Data Object Specification dialog and select **Is Collection** > **true**.

To draw a Data Association:

1. On the **Process Diagram** toolbar, select **Data Association**.
2. Click an element, which is the source of Data Association, in a diagram.
3. Click an element, which is the target of Data Association, in a diagram.

NOTE	• The source or target of a Data Association must always be a **Data Object**, **Data Store**, **Data Input**, or **Data Output**. • The other end of a Data Association should always be an activity or event.

To display a Data Object connected to a Sequence Flow:

1. Draw a Data Association from an Activity to a Data Object.
2. Draw another Data Association from the Data Object to another Activity.
3. Draw a Sequence Flow from the first to the second Activity.
4. Open the Data Object shortcut menu and select **Show Connected to Sequence Flow** (Figure 79).

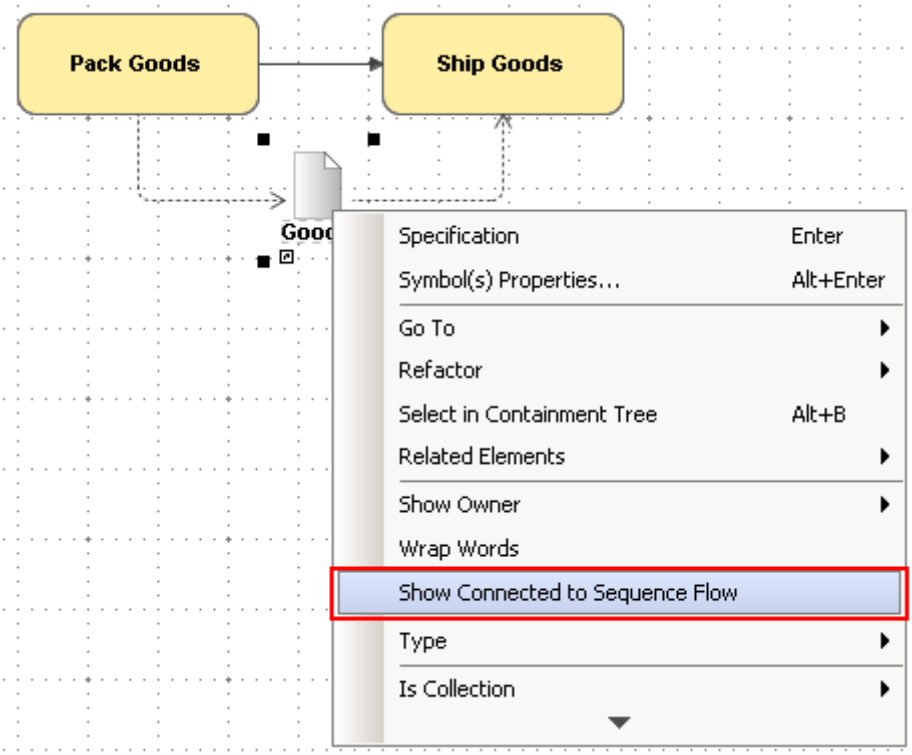


Figure 79 -- Data Object Shortcut Menu.

NOTE	A Data Object connected to a Sequence Flow is a visual shortcut of two Data Associations. In the model, the Data Associations will still exist and the Data Object connecting to the Sequence Flow will be displayed.

Related concepts

Items and Data

3.3 BPMN Collaboration Diagram Procedures

This section will describe how to create and specify a BPMN Collaboration diagram.

NOTE	A BPMN Collaboration diagram can contain the elements from a Process diagram.

3.3.1 Creating a BPMN Collaboration Diagram

You can create a BPMN Collaboration diagram by using the (i) main toolbar, (ii) main menu, or (iii) shortcut menu in the Containment tree.

(i) To create a new BPMN Collaboration diagram by using the main toolbar:

1. Click the **BPMN Collaboration Diagram** icon on the BPMN 2.0 toolbar (Figure 80). The **Create Diagram** dialog will open.

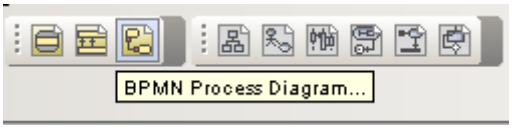


Figure 80 -- BPMN Collaboration Diagram Icon on the Main Toolbar

2. Type the name and select the owner of the diagram.
3. Click **OK**.

(ii) To create a new BPMN Collaboration diagram by using the main menu:

1. On the **Diagrams** menu, click **BPMN2 Diagrams** > **BPMN Collaboration Diagram**. The **BPMN Collaboration Diagrams** dialog will open.
2. Click the **Add** button. The **Create Diagram** dialog will open.
3. Type the name and select the owner of the diagram, and then click **OK**.

(iii) To create a new BPMN Collaboration diagram by using the shortcut menu in the Containment tree:

1. Right-click a package in the Containment tree and select **New Diagram** > **BPMN2 Diagrams** > **BPMN Collaboration Diagram**.
2. Type the name of the diagram.

IMPORTANT!	You can create a BPMN Collaboration diagram only from the Business Modeler and Full Featured user perspectives.

Related concepts

BPMN Collaboration Diagram

Related procedures

3.2 BPMN Process Diagram Procedures

3.3.2 Creating Pool and Lane

A Pool in a BPMN collaboration diagram represents a participant of a collaboration. A Pool can have its inner process flows defined. You can add the elements from a BPMN Process diagram to a pool. You can also hide the pool details by displaying a “black box” pool. A Pool can also have inner lanes.

To draw a pool:

- On the **Collaboration Diagram** toolbar, click the **Horizontal Pool** arrow button and select either **Horizontal Pool** or **Vertical Pool** (Figure 81).

Figure 81 -- Drawing a Pool

To draw a Pool with a suppressed context:

- Click **Participant (Pool)** on the **Conversations** toolbar (Figure 82).

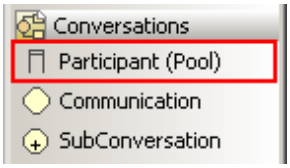


Figure 82 -- Drawing a Suppressed Context Pooll

To create a Pool with a representing Participant:

- Drag a Participant from the Containment tree to a BPMN Collaboration diagram.

To open a Pool Specification dialog:

- Right-click the Pool header and select **Specification** (Figure 83).

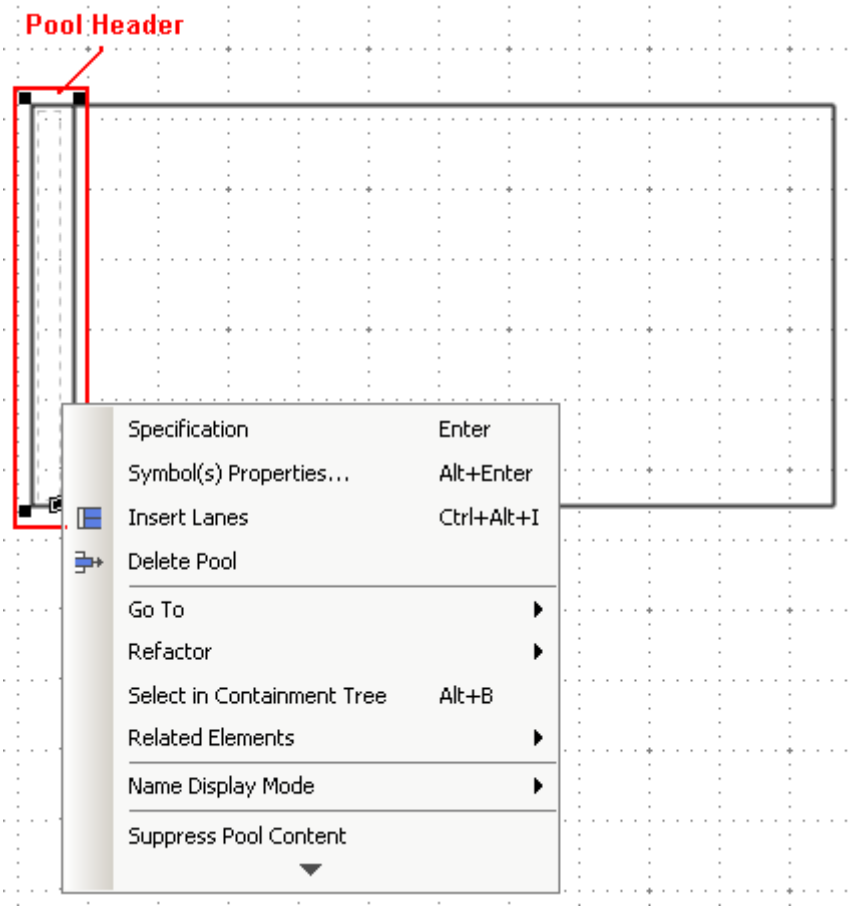


Figure 83 -- Pool Shortcut Menu

To specify a model element represented by a Pool, do one of the following:

- Click a Pool in a diagram. The smart manipulators toolbar will open (Figure 84). Click the **Participant** button, or

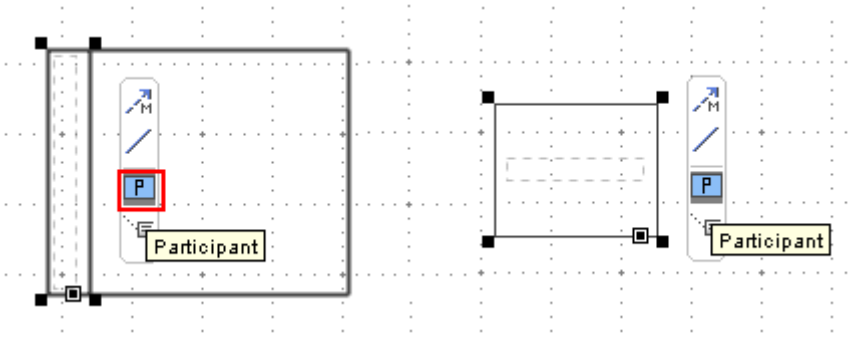


Figure 84 -- Selecting a Pool

- In the Pool Specification window, open the **Represents** drop-down list and select an element (Figure 85), or

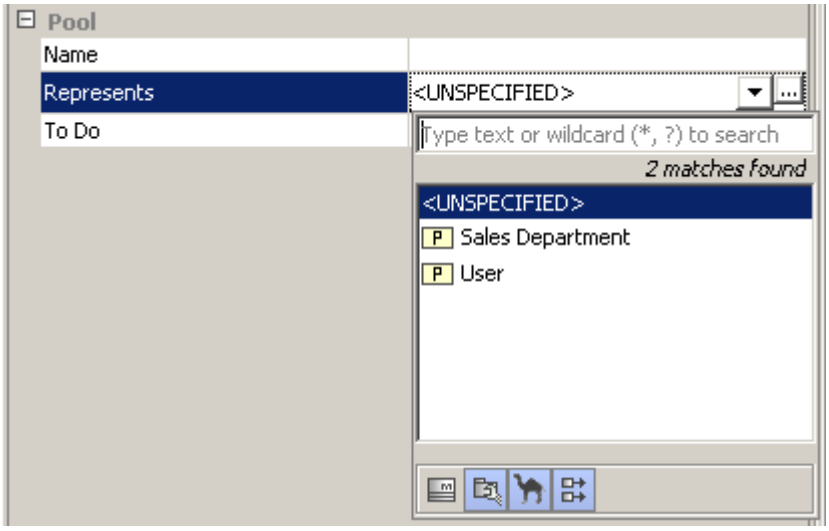


Figure 85 -- Selecting a Participant

- Select a represented element in the Containment tree and drag it to the Pool header in a diagram.

NOTE	A Pool may represent a BPMN Participant element or UML classifier element.

TIP!	You can create a Participant in your model as described in section 3.1.2 Creating BPMN Elements in the Model Browser.

To hide a Pool content in a diagram (to display a “black box” pool):

- Open the pool shortcut menu and click either (i) **Suppress Pool Content** or (ii) **Symbol(s) Properties** and select the **Suppress Pool Content** check box.

A Pool with suppressed contents that references a multiInstance Participant will be displayed with a MultiInstance marker.

To display a multiInstance marker on a Pool:

- Open the Pool Specification dialog, open the **Represents** drop-down list, and select a represented multiInstance Participant.

NOTE	A MultiInstance marker can be displayed only on a Poll with suppressed contents.

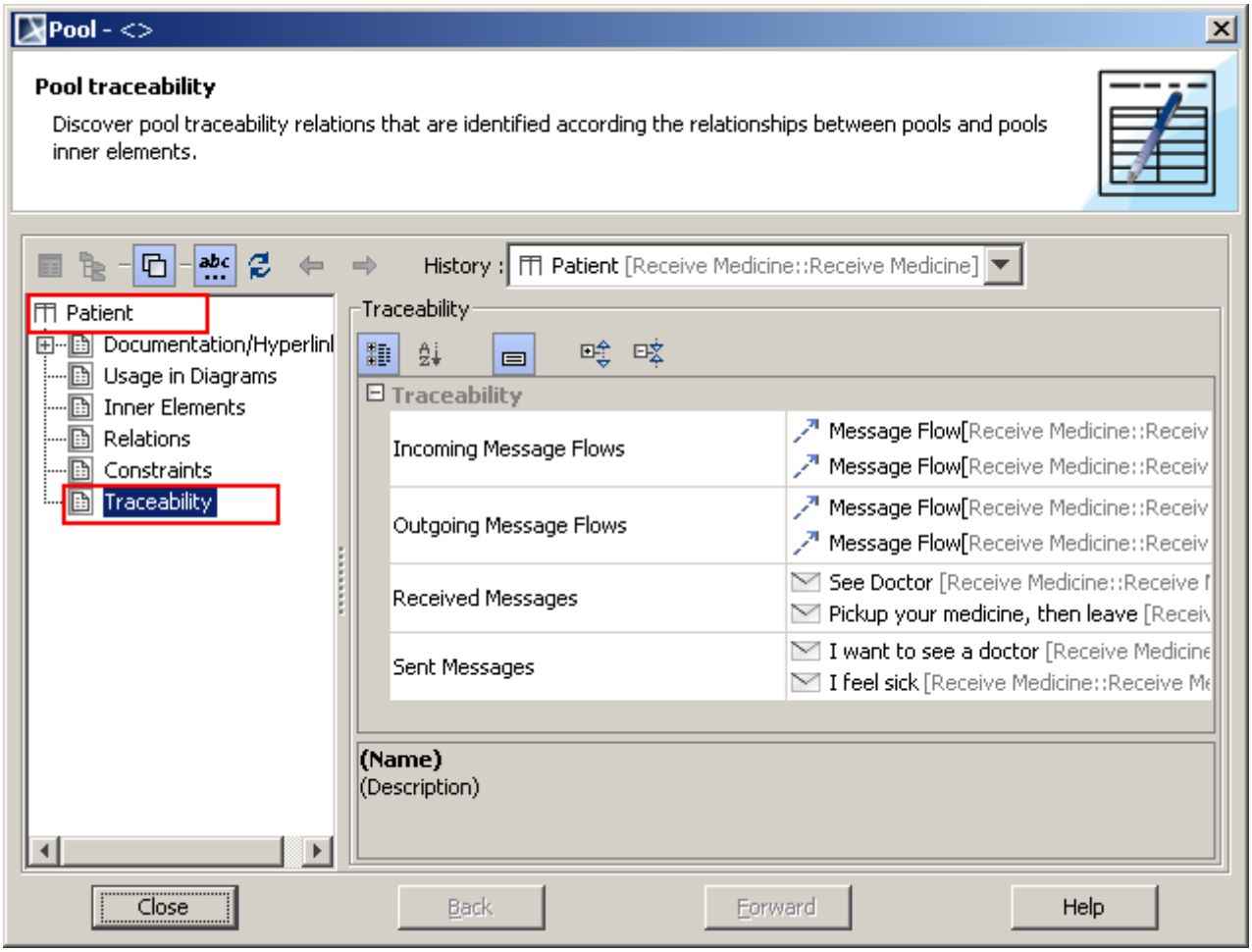
TIP	The **Minimum Multiplicity** value of a MultiInstance participant property must be at least 2.

To add a lane to a Pool:

- Open the Pool shortcut menu and click either **Insert Lanes** or **Insert Inner Lanes**, and select a lane type.

To review the Pool traceability information:

- Open the Pool Specification dialog and click **Traceability**. The Pool traceability information will open (Figure 86).



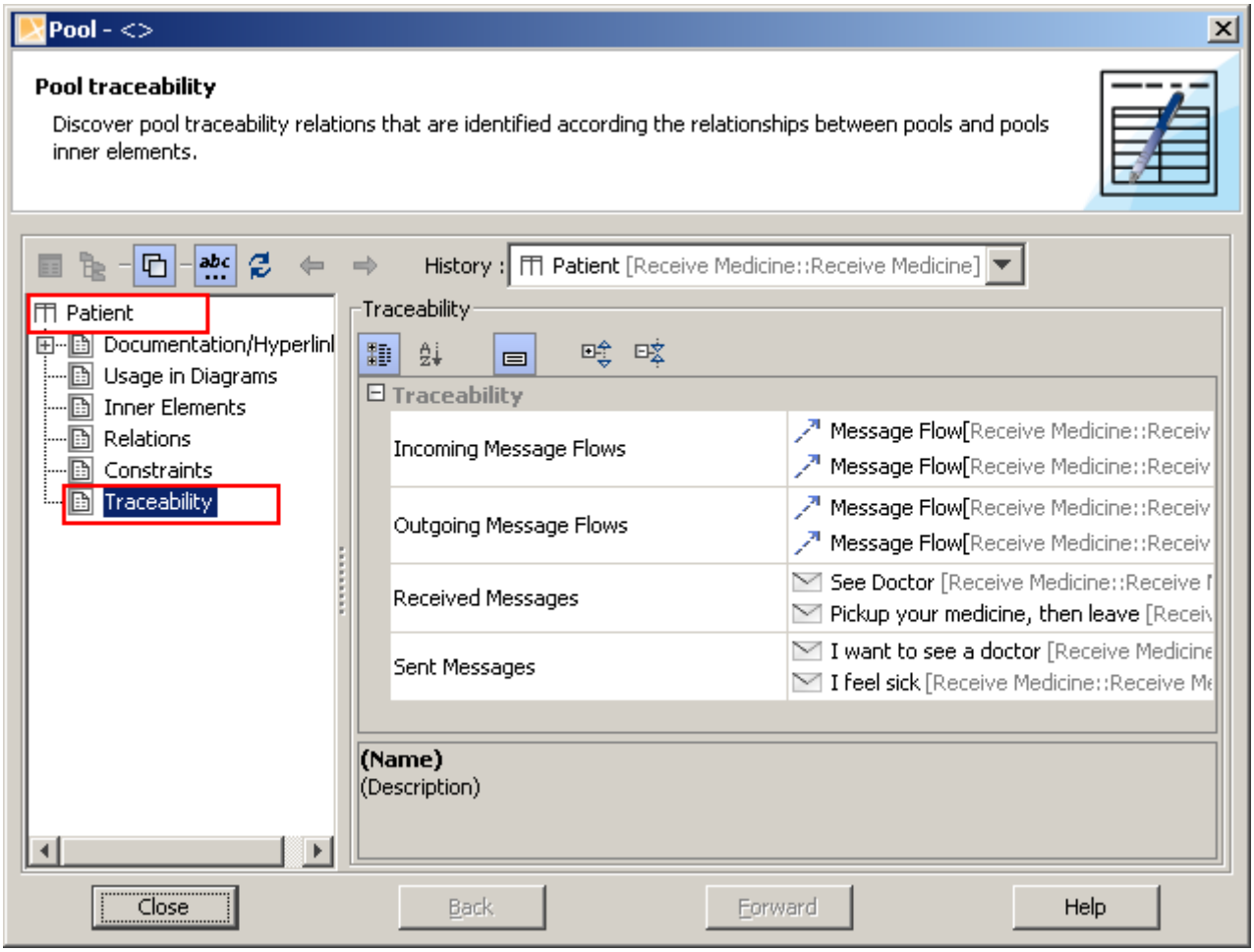


Figure 86 -- Opening Pool Traceability Information

Related concepts

Participant

Pool and Lane

Related procedures

3.1.2 Creating BPMN Elements in the Model Browser

3.3.3 Creating a Message Flow

A Message flow connects two pools or the inner elements of a pool.

To draw a Message Flow:

1. Click **Message Flow** on the **Collaboration Diagram** toolbar.
2. Click an element, which is the source of the Message Flow, in a diagram.
3. Click an element, which is the target of the Message Flow, in a diagram.

IMPORTANT!	A Message Flow must connect two different Pools (or the inner elements of a pool).

To create a new Message for a Message Flow:

- Drag a classifier (Class, Input Set, Output Set, or Error) from the Containment tree to a Message Flow in a Collaboration diagram.

To create a Message for a Message Flow:

1. Click a Message Flow path in a diagram and click the **Referenced Messages** button on the Smart Manipulators toolbar (Figure 87). The **Select Message** dialog will open.

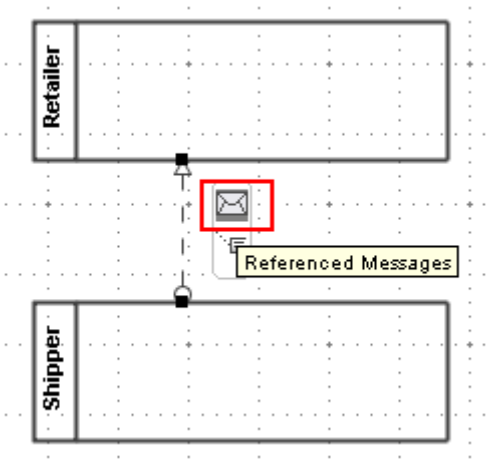
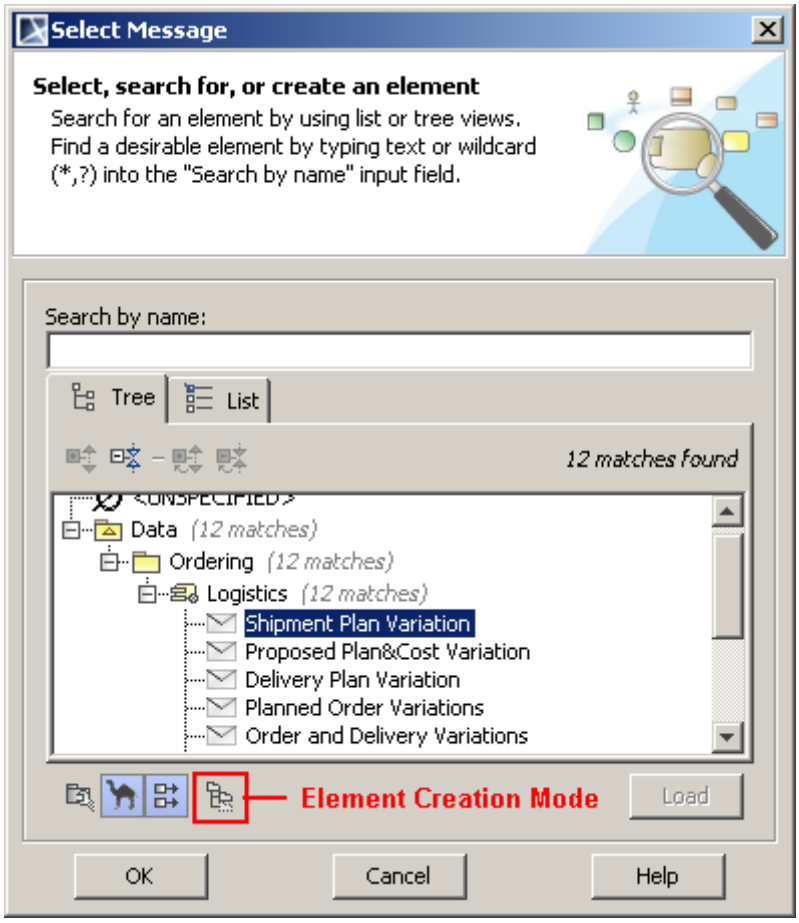


Figure 87 -- Referenced Messages Button on the Smart Manipulators Toolbar



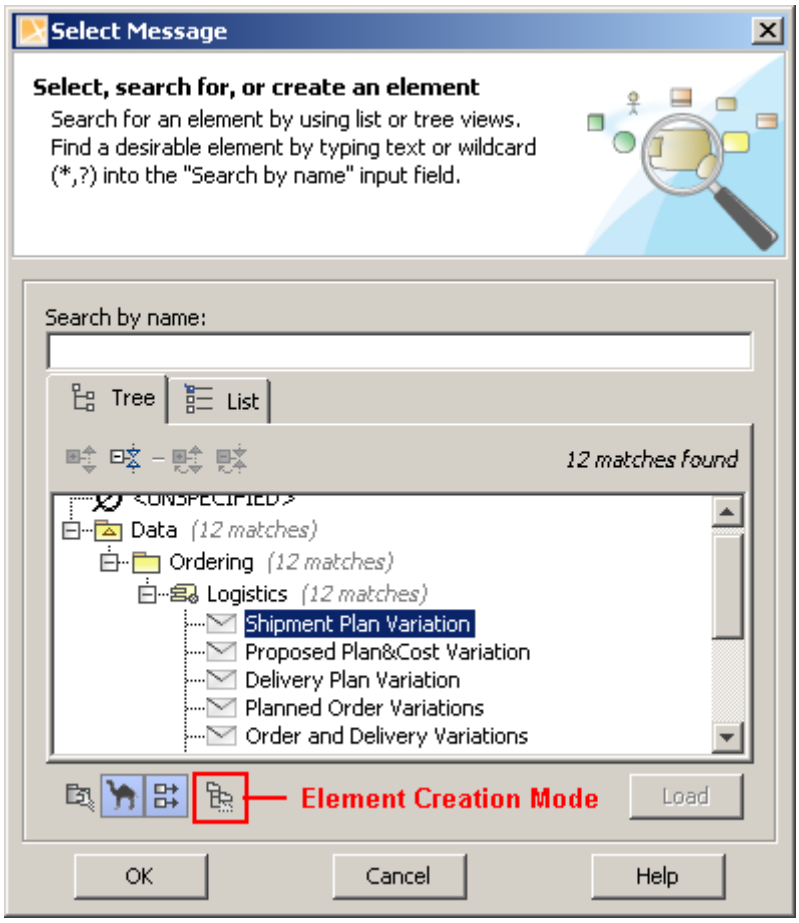
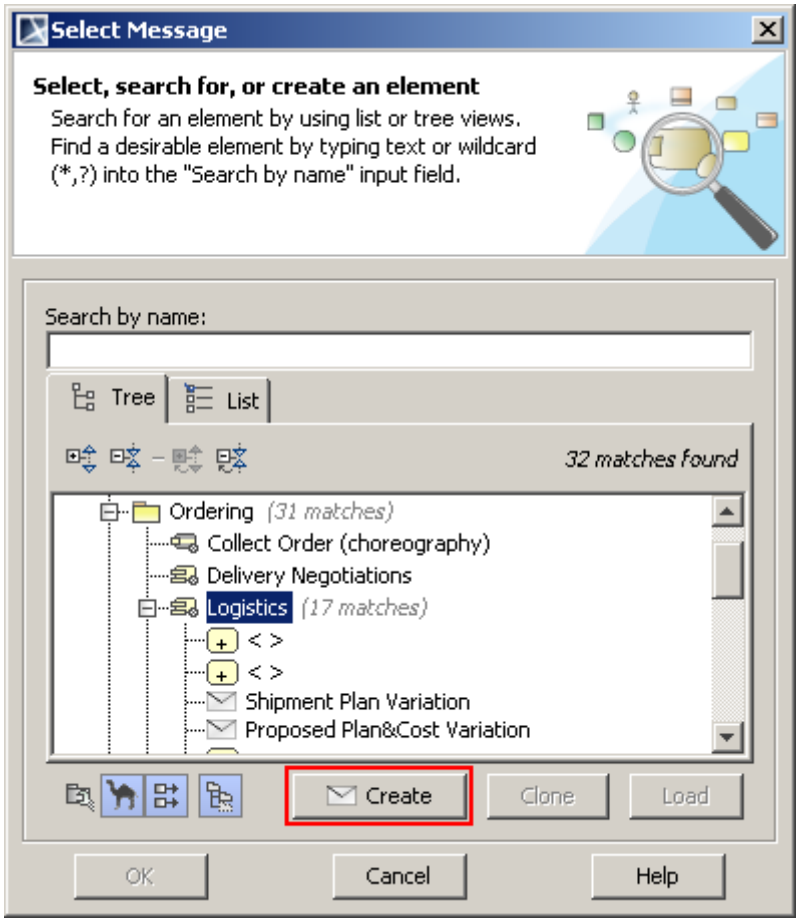


Figure 88 -- Selecting a Message in the Select Message Dialog

2. Click the **Element creation mode** button.
3. Select a Collaboration element in the model element tree and click the **Create** button (Figure 89).



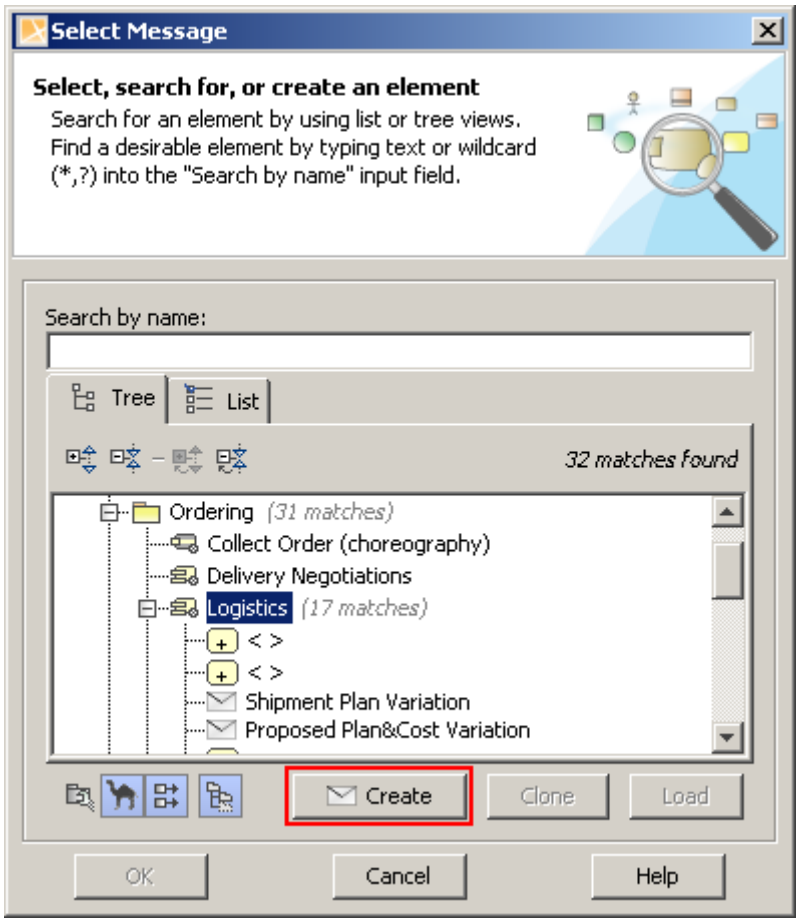


Figure 89 -- Creating a Collaboration Element in the Select Message Dialog

To select a Message for a Message Flow, either:

(i)Click a Message Flow path in a diagram and click the **Referenced Messages** button on the Smart Manipulators toolbar. The **Select Message** dialog will open. Select a message in the tree and click **OK**.

(ii) Right-click the the **Message Flow** and select **Specification**. The **Message Flow** specification dialog will open. Click the **Message Ref "..."** button (Figure 90) and select a message.

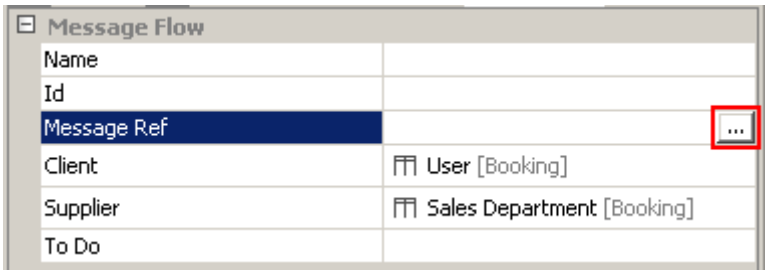


Figure 90 -- Message Ref in the Message Flow Specification dialog

NOTE	You can create a Message in a BPMN Process, Collaboration, Choreography, or SubProcess element.

To change a Message Flow display mode:

- Right-click a Message Flow and select either (i) **Show Message** and select a message display mode (**Do not Show**, **Associated with Message Flow**, or **Overlapping with Message Flow**), or (ii) **Symbol(s) Properties** and select the required **Show Message** property value (**Do not Show**, **Associated with Message Flow**, or **Overlapping with Message Flow**).

Related concepts

Message

Message Flow

3.3.4 Creating a Communication

A Communication groups messages exchanged between Participants.

To create a Communication between two participants:

1. Draw a Communication.
2. Draw a Communication Link from the Communication to a Participant.
3. Draw another Communication Link from the Communication to another Participant.

IMPORTANT!	A Participant (pool) requires a specified Represented Participant.

To select the message flows grouped by a Communication:

1. Either: (i) right-click a communication shape, select **Specification**, click **Message Flow Refs**, and then click the **"..."** button, or (ii) click a Communication shape in a collaboration diagram and click the **Message Flows** button on the Smart Manipulators toolbar (Figure 91).

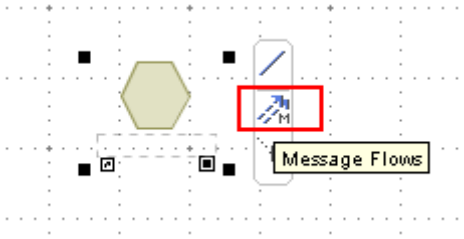


Figure 91 -- Message Flows Button on the Smart Manipulators Toolbar

2. The **Select Message Flows** dialog will open showing all of the Message Flows that are grouped by a Communication (Figure 92).

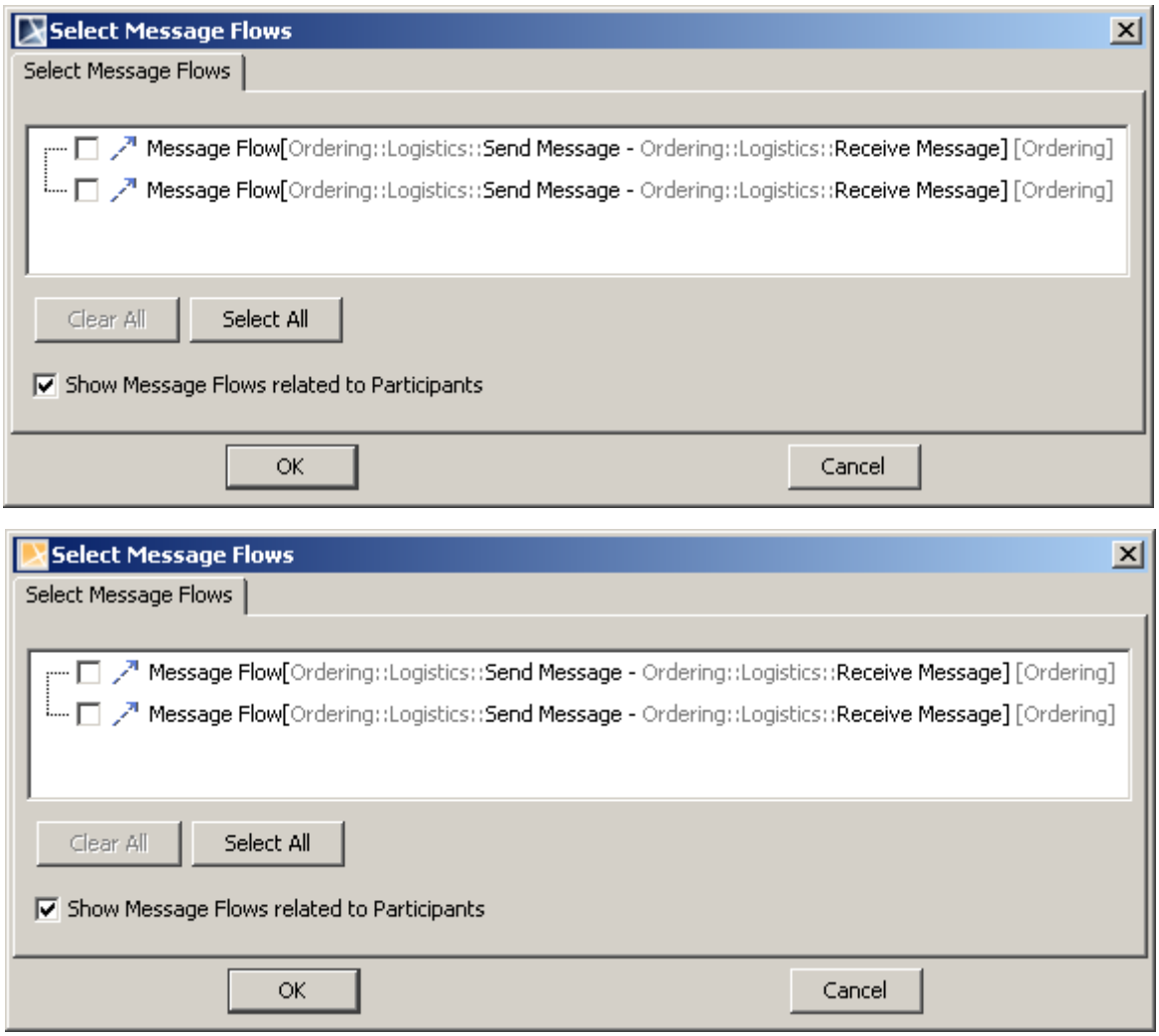


Figure 92 -- Selecting Message Flows in the Select Message Flows Dialog

3. Select the Message Flows and click **OK**.

NOTE	When the **Show Message Flows Related to Participants** check box is selected, only the message flows that exist in a project between the representing participants of the pools that are connected by a communication will show. Clear the check box to see all of the message flows in a project.

TIP	You can also assign a Message Flow to a Communication by dragging it from the browser contrainment tree to the Communication shape in a BPMN Collaboration diagram.

Related concepts

Communication

Related procedures

3.3.2 Creating Pool and Lane

3.3.5 Creating a SubConversation

A SubConversation can contain inner Conversation Nodes (Communications and SubConversations).

To create a conversation node for a SubConversation:

1. Right-click a **SubConversation** and select **Specification**. The SubConversation specification dialog will open (Figure 93) .

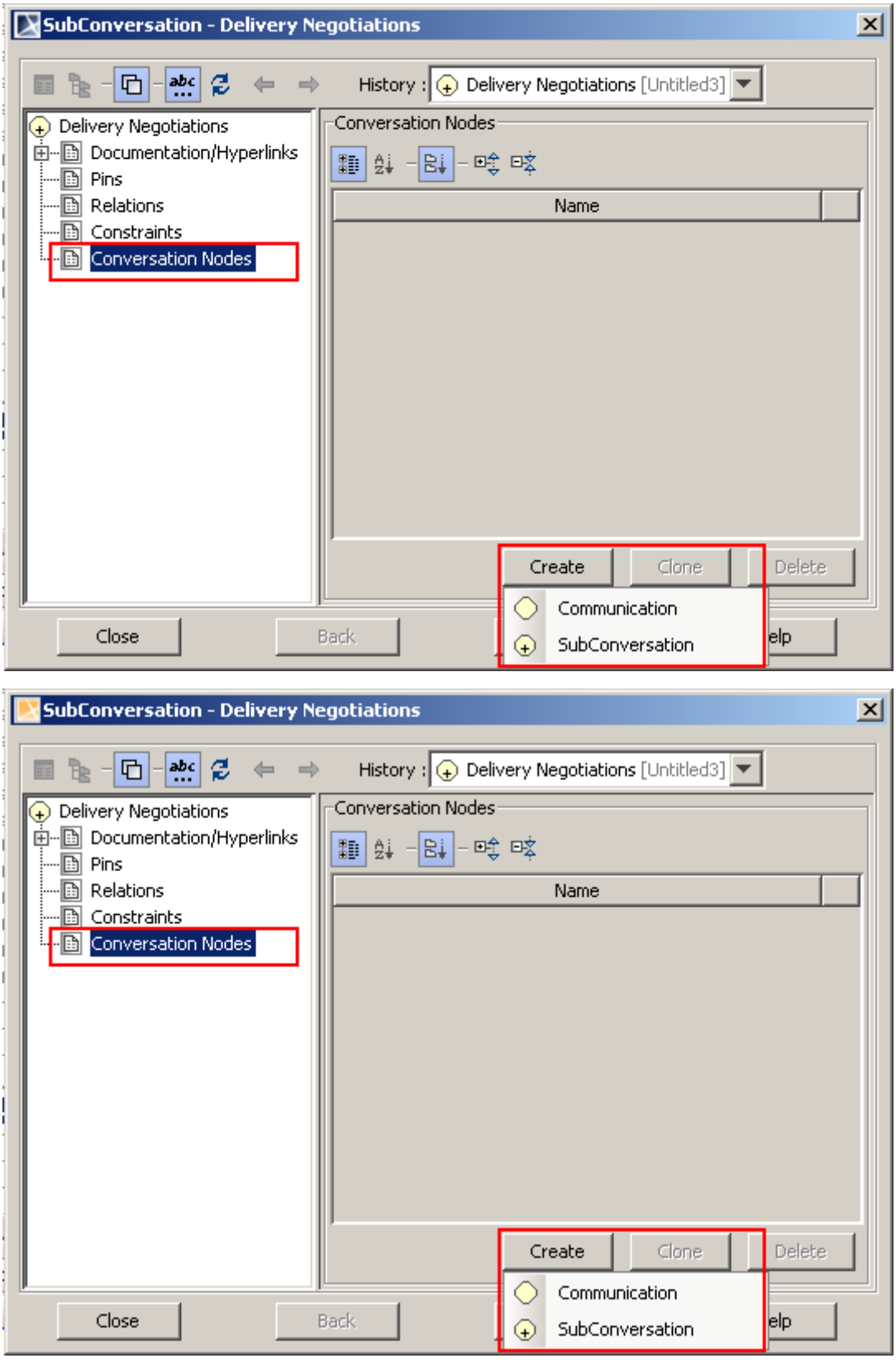


Figure 93 -- Creating a Conversation Node in the Subconversation Specification Dialog

2. Click **Conversation Nodes** > **Create**, and then select either **Communication** or **SubConversation**.
3. Type the name of the node and click **Close**.

Related concepts

2.3.4 SubConversation

3.4 BPMN Choreography Diagram Procedures

This section will describe how to create and specify a BPMN Choreography diagram.

3.4.1 Creating a BPMN Choreography Diagram

You can create a BPMN Choreography diagram by using the (i) main toolbar, (ii) main menu, (iii) shortcut menu in the Containment tree.

(i) To create a new BPMN Choreography diagram by using the main toolbar:

1. Click the **BPMN Choreography Diagram** icon on the BPMN 2.0 toolbar. The **Create Diagram** dialog will open (Figure 94).

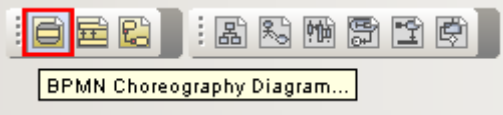


Figure 94 -- BPMN Choreography Icon on the Main Toolbar

2. Type the name and select the owner of the diagram, and then click **OK**.

(ii) To create a new BPMN Choreography diagram by using the main menu:

1. On the **Diagrams** menu, click **BPMN2 Diagrams** > **BPMN Choreography Diagrams**. The **BPMN Choreography Diagrams** dialog will open.
2. Click the **Add** button. The **Create Diagram** dialog will open.
3. Type the name and select the owner of the diagram, and then click **OK**

(iii) To create a new BPMN Collaboration diagram by using the shortcut menu in the Containment tree:

1. Right-click a package in the Containment tree and click **New Diagram** > **BPMN2 Diagrams** > **BPMN Choreography Diagram**.
2. Type the name of the diagram.

IMPORTANT!	You can create a BPMN Choreography diagram only from the Business Modeler and Full Featured user perspectives.

Related concepts

BPMN Choreography Diagram

2.4.1 Choreography

3.4.2 Creating Choreography Activity

This section will describe how to model choreography activities in a BPMN Choreography diagram. Choreography Activities, such as Choreography Task, SubChoreography, and Call Choreography, can have the following specific markers displayed on their shapes:

- Standard loop marker
- MultiInstance loop (parallel) marker
- MultiInstance loop (sequential) marker

Choreography activities must have a list of specified participants and initiating participant. The Participants in a choreography activity will be displayed in gray, and the initiating participant will be displayed in another color.

You can specify a list of participants in a choreography activity by using the (i) Specification dialog, (ii) Smart Manipulators toolbar, and (ii) drag-and-drop action.

(i) To specify a list of participants by using the Specification dialog:

1. Right-click a Choreography activity and select **Specification**.
2. Click the **Participant Refs** "**...**" buttton (Figure 95). The **Select Participant** dialog will open.

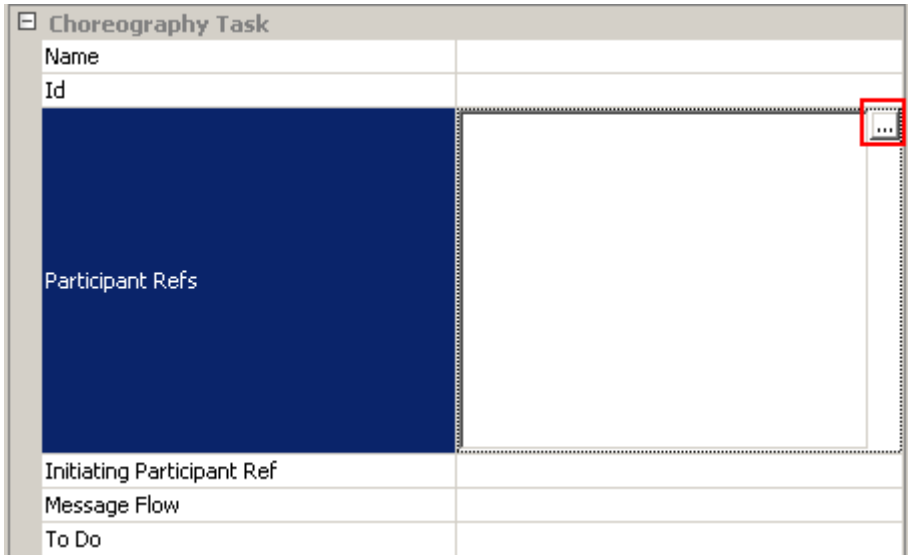
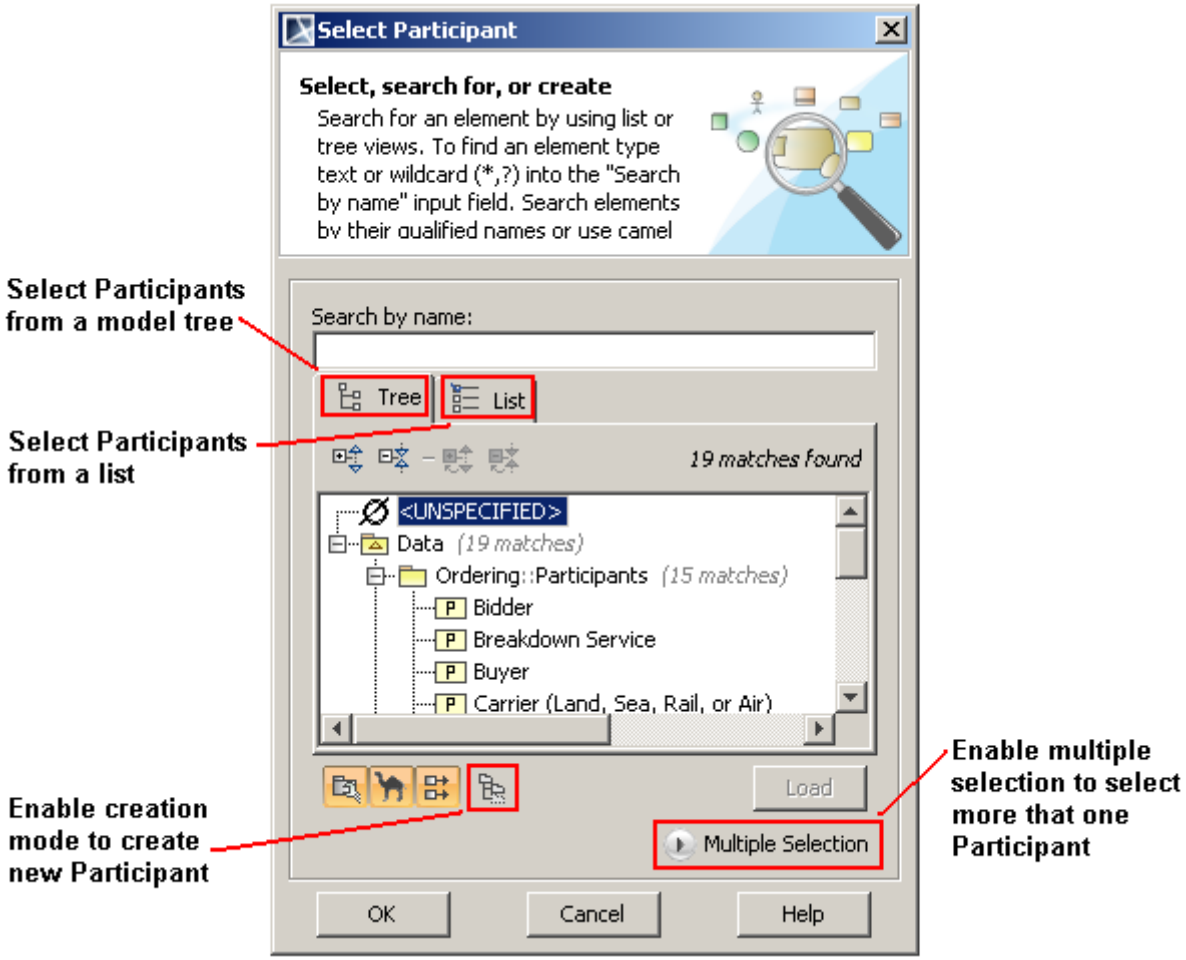


Figure 95 -- Participant Refs in the Choreography Activity Specification Dialog

3. Click either the **Tree** or **List** tab, select participants, and then click **OK** (Figure 96).



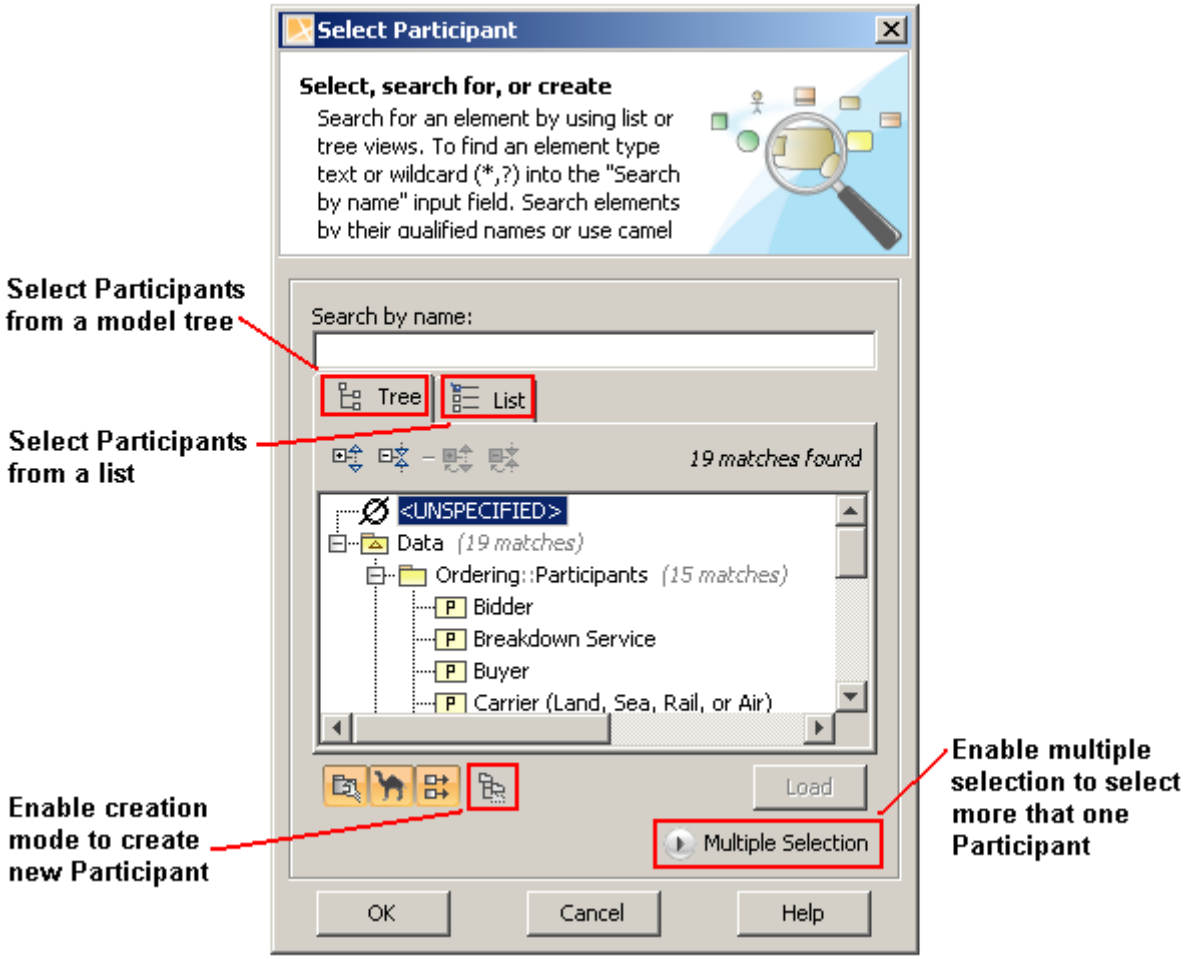


Figure 96 -- Selecting Participants in the Select Participant Dialog

TIP!	• If you cannot see the participant you want on the list, click the **creation mode** button in the **Select Participant** dialog, and create a new participant. • When creating a participant, select a package as the participant owner.

IMPORTANT!	You need to specify at least two participants in a Choreography activity.

NOTE	The MultiInstance participants on a choreography shape will be displayed with a multiInstance marker in the participant compartment.

(ii) To specify a list of participants by using the Smart Manipulators toolbar:

1. Click a Choreography activity in a BPMN Choreography diagram. The Smart Manipulators toolbar will open (Figure 97).

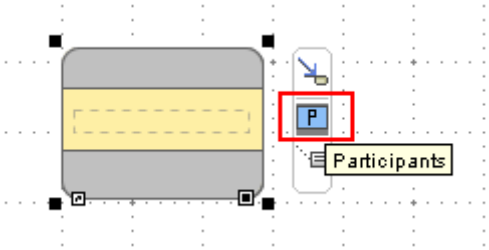


Figure 97 -- The Participants Button on the Smart Manipulators Toolbar

2. Click the **Participants** button (Figure 97). The **Select Participant** dialog will open.
3. Select the Participants and click **OK**.

(iii) To specify a list of participants by using the drag-and-drop action:

- Drag a Participant from the Containment tree to a Choreography activity in a BPMN Choreography diagram.

TIP	You can drag more than one participant at a time.

To specify an initiating participant in a choreography activity:

- Open a Choreography activity **Specification** dialog. Click the **Initiating Participant Ref** property button to select a participant from the list (Figure 98).

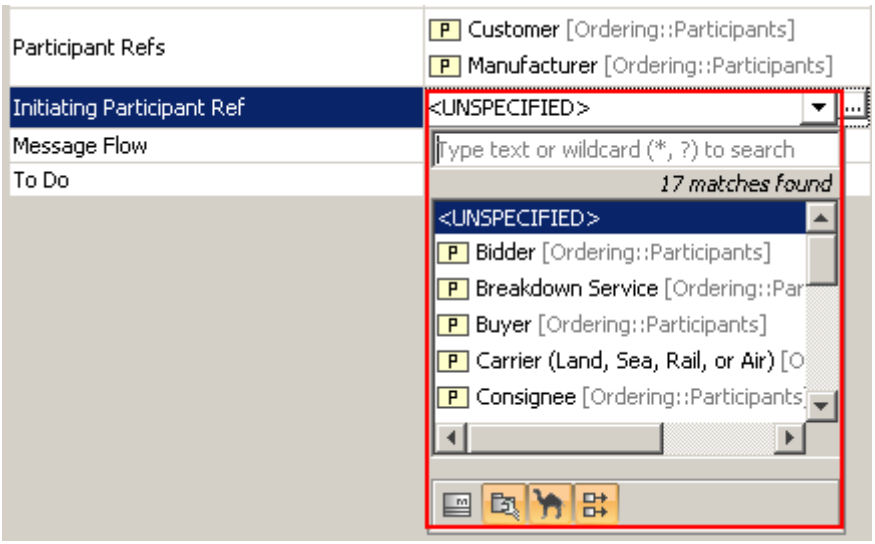


Figure 98 -- Selecting an Initiating Participant

IMPORTANT	The **Initiating Participants Ref** property is required for a choreography activity.

To add a Standard Loop marker to a choreography activity:

- Right-click a choreography activity and select **Standard Loop**.

To add a MultiInstance Loop (parallel) marker to a choreography activity:

- Right-click a choreography activity and select **MultiInstance Loop**.

To display a MultiInsatance Loop (sequential) marker on a MultiInstane Loop choreography activity, either:

- Right-click a choreography activity with the MultiInstance Loop (parallel) marker and select **Is Sequential**.
- Right-click a choreography activity with the MultiInstance Loop marker and select **Specification**. Select **Is Sequential** > **false** and click **Close** (Figure 99).

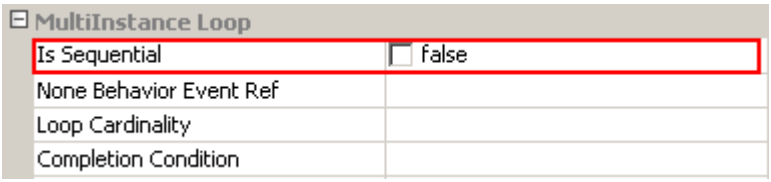


Figure 99 -- Displaying a MultiInstance Loop (Sequential) Marker

Related concepts

2.4.2 Choreography Activities

2.1.7 Participant

Related procedures

3.1.2 Creating BPMN Elements in the Model Browser

3.4.3 Creating a SubChoreography

A SubChoreography can be displayed with different symbol properties:

- An Expanded SubChoreography can contain inner shapes.
- A Collapsed SubChoreography cannot display inner shapes. A plus sign (+) marker is displayed for a collapsed subprocess.

To draw an expanded SubChoreography:

- On the **BPMN Choreography Diagram** toolbar in a BPMN Choreography diagram, click the **Collapsed SubChoreography SubProcess** arrow button, and select **Expanded SubChoreography** (Figure 100).

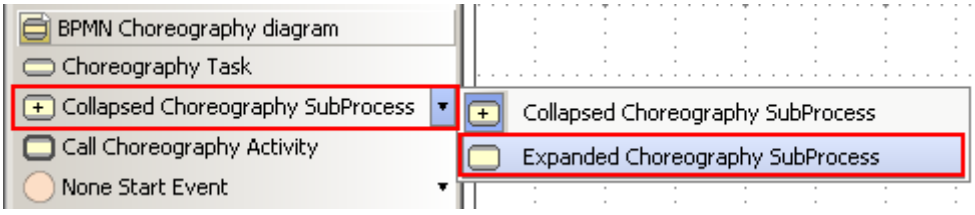


Figure 100 -- Selecting Expanded Choreography SubProcess

To draw a collapsed SubChoreography:

- On the **BPMN Choreography Diagram** toolbar in a BPMN Choreography diagram, click the **Collapsed SubChoreography SubProcess** arrow button, and select **Collapsed SubChoreography**.

To convert a collapsed SubChoreography to/from an expanded SubChoreography:

- Right-click a SubChoreography in a BPMN Choreography diagram and either select or deselect **Suppress Content**.
- Right-click a SubChoreography in a BPMN Choreography diagram and click **Symbol(s) Properties**. The **Symbol Properties** dialog will open. Either select or clear the **Suppress Content** check box.

Related concepts

2.4.2.2 SubChoreography

3.4.4 Creating a Choreography Task

A Choreography Task can have references to message flows, existing between referenced participants.

To draw a Choreography Task

- On the **BPMN Choreography Diagram** toolbar in a BPMN Choreography diagram, click **Choreography Task**, and then click the diagram (Figure 101).

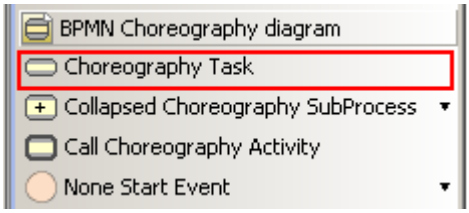
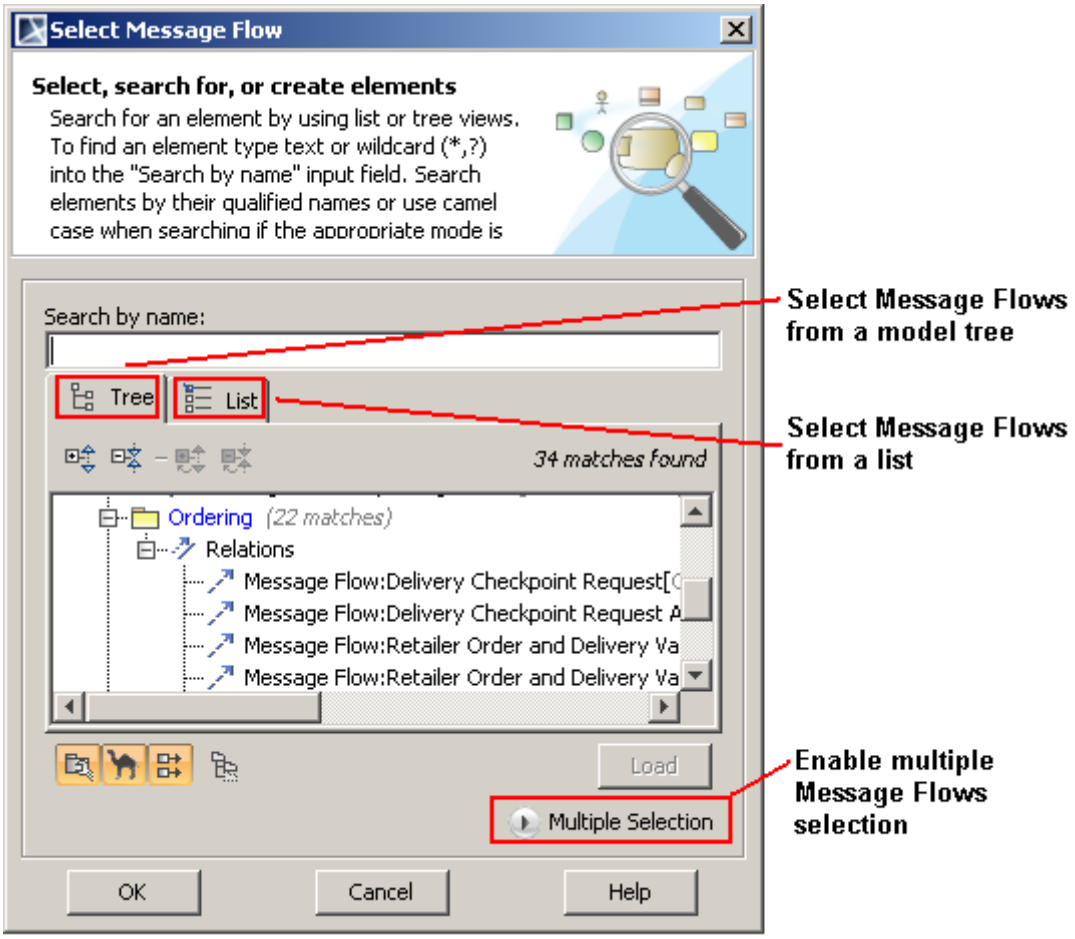


Figure 101 -- Choreography Task Button

To select Message Flows referenced by a Choreography Task:

1. Open the choreography activity Specification dialog, **Message Flow** property (Figure 102).



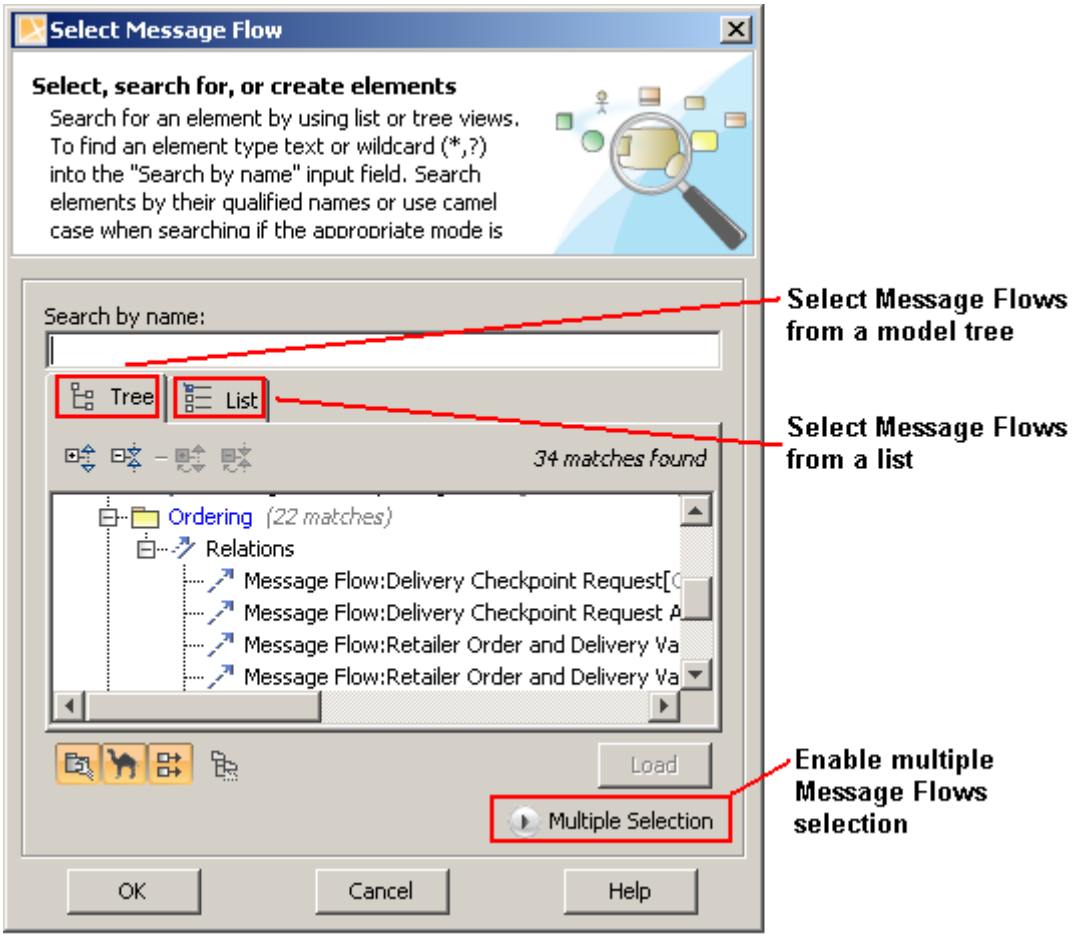


Figure 102 -- Selecting Message Flows

2. Select the Message Flows and click **OK**.

IMPORTANT	If the Message Flows, which are referenced by a Choreography Task, have the Messages specified, they will be displayed and attached to the Choreography Task in a diagram.

To specify Messages for a Choreography Task:

1. Create a BPMN Collaboration diagram.
2. Draw two pools and specify the Referenced Participants for the pools.
3. Draw a Message Flow between the Pool and specify a Message for **Message Ref** in the **Message Flow** property (Figure 103).

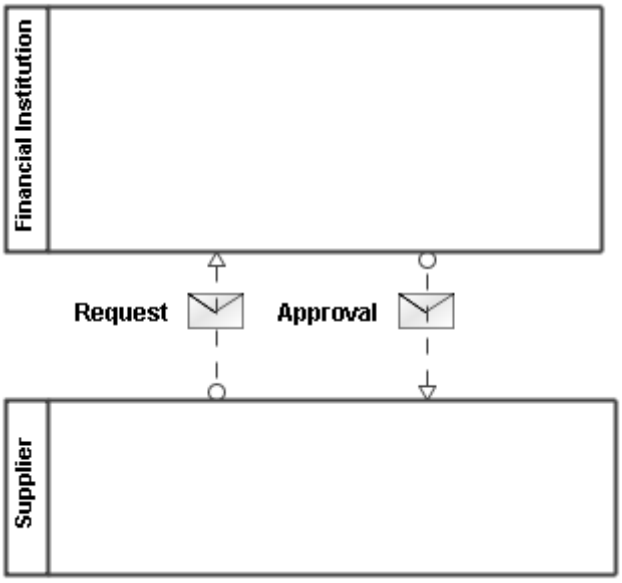


Figure 103 -- Pools, Participants, and Message Flow

4. Create a BPMN Choreography diagram and draw a Choreography Task.
5. Open the **Choreography Task Specification** dialog. Specify the Participants for the **Participant Refs** property and a Participant for the **Initiating Participant Ref** property.
6. Click the "**...**" button to edit the **Message Flow** property. The **Select Message Flows** dialog will open. Select the Message Flows you have created in step 3 as the **Message Flow** property value and click **Submit**.

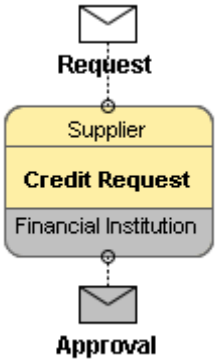


Figure 104 -- Messages Created for a Choreography Task

NOTE	• Initiating Messages (connected to an initiating Participant compartment) will be displayed in white. • Non-initiating messages (connected to a non-initiating Participant compartment) will be displayed in gray.

To hide or display the Messages for a Choreography Task, either:

- Right-click a Choreography Task and either select or deselect **Show Messages**, or
- Right-click a Choreography Task and click **Symbol(s) Properties**. The **Symbol Properties** dialog will open. Either select or clear the **Show Messages** check box.

Related concepts

2.4.2.1 Choreography Task
Participant
Message
Collaboration

Related procedures

3.3.2 Creating Pool and Lane
3.3.3 Creating a Message Flow

3.4.5 Creating a Call Choreography

A Call Choreography holds a reference to a Choreography.

To create a Call Choreography:

1. Click the **Call Choreography** button on the **BPMN Choreography Diagram** toolbar in a BPMN Choreography diagram (Figure 105) and click the diagram to draw the shape. The **Select Behavior** dialog will open.

.

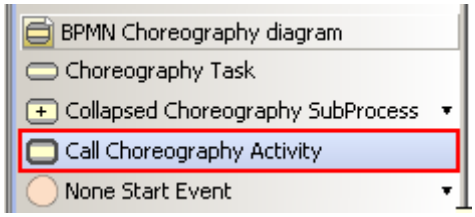


Figure 105 -- Creating a Call Choreography

2. Select a choreography and click **OK**.

To change the element called by a Call Choreography, either:

- Open the Call Choreography shortcut menu, click **Called Element**, and then select a Choreography from the elements list, or
- Open the **Call Choreography Specification** dialog and select a choreography as the **Called Element** property value.

Related concepts

2.4.2.3 Call Choreography

3.5 Converting Activity Diagram to or from BPMN Process Diagram

This section will describe how to convert your Activity diagram to a BPMN Process diagram and vice versa.

IMPORTANT!	Some incompatible information between Activity and BPMN Process diagrams may be lost during conversion.

To convert an Activity diagram to a BPMN Process diagram:

1. Click either:

   (i) **Transform to BPMN Process Diagram** on the Activity diagram context menu (Figure 106) or

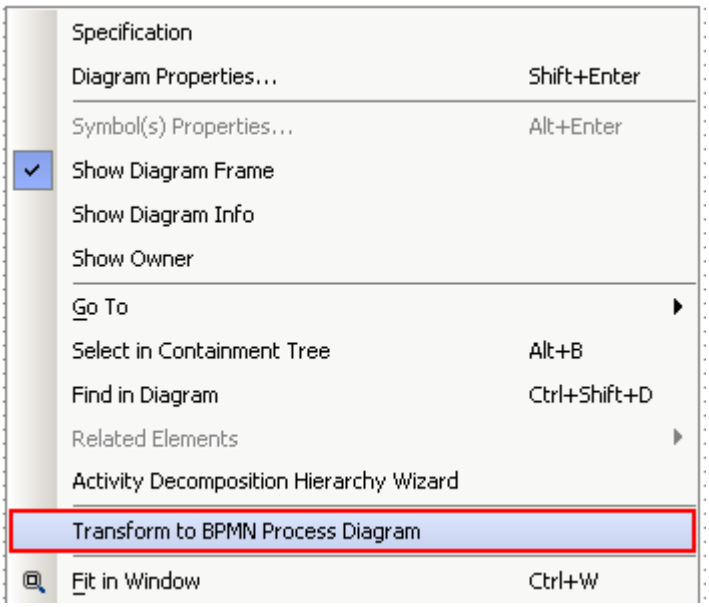


Figure 106 -- Converting BPMN Process Diagram to Activity Diagram Using the Context Menu

   (ii) **Tools** > **Model Transformations** on the main menu (Figure 107).

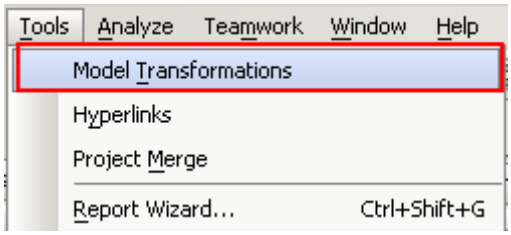


Figure 107 -- Converting BPMN Process Diagram to Activity Diagram Using the Main Menu

2. The **Model Transformation Wizard** dialog will open. Select **UML Activity Diagram to BPMN Process Diagram** and click **Next** (Figure 108).

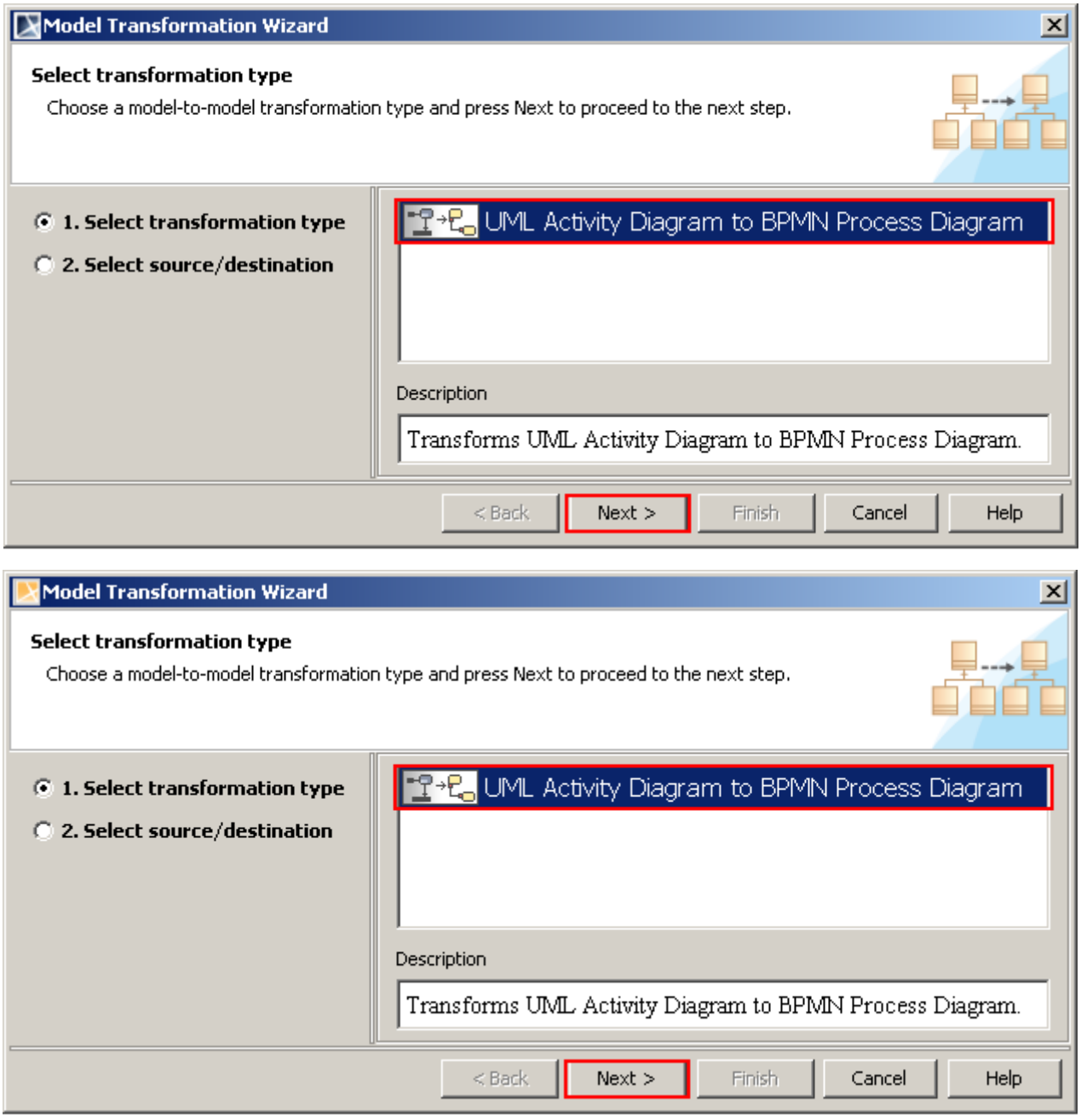
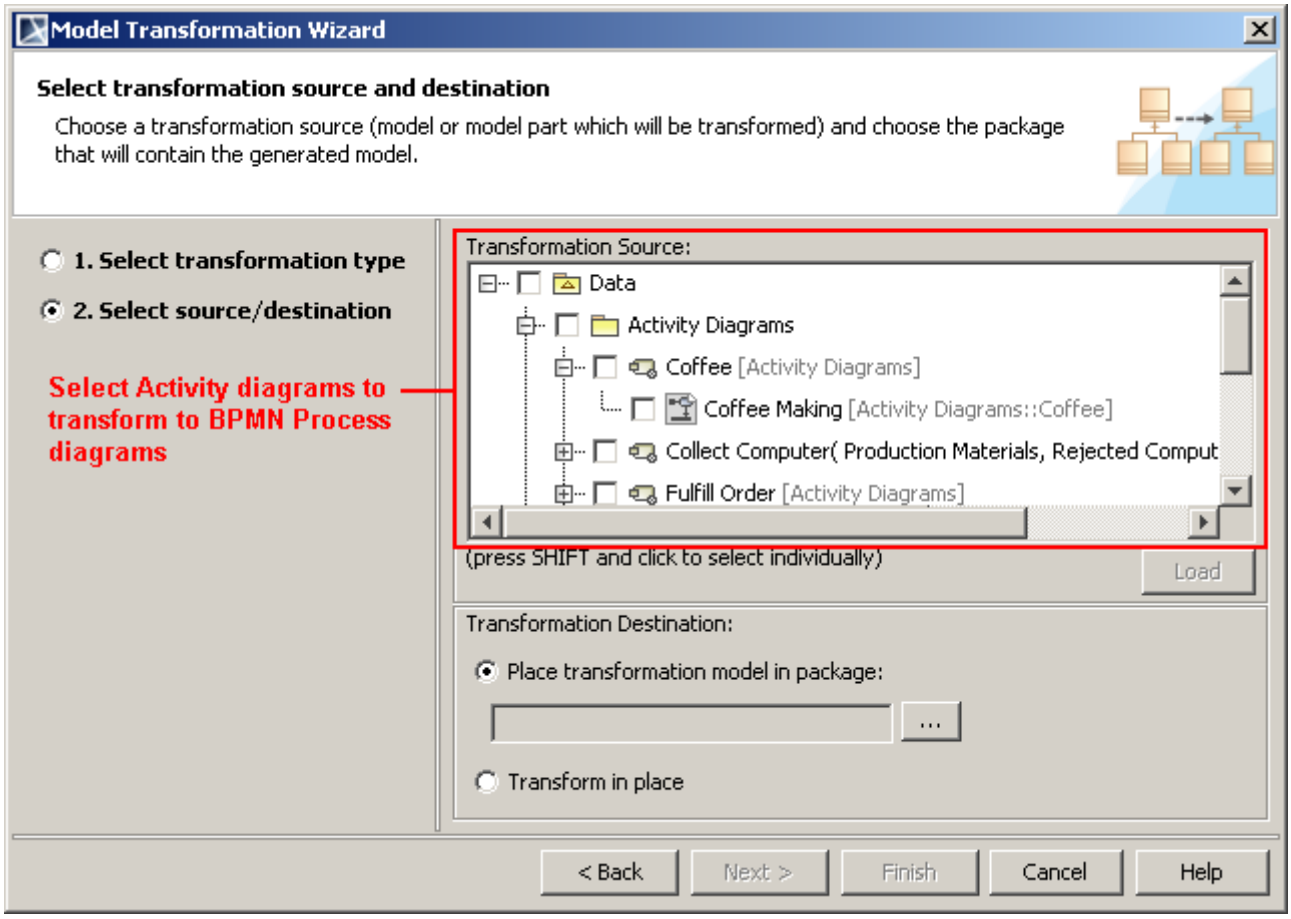


Figure 108 -- Model Transformation Wizard Step 1

NOTE	A dialog may open to inform you that the required profiles are no longer used in a project. Click **Yes** to load the profiles required for the transformation.

3. Select an activity diagram that will be transformed to a BPMN Process diagram (Figure 109).



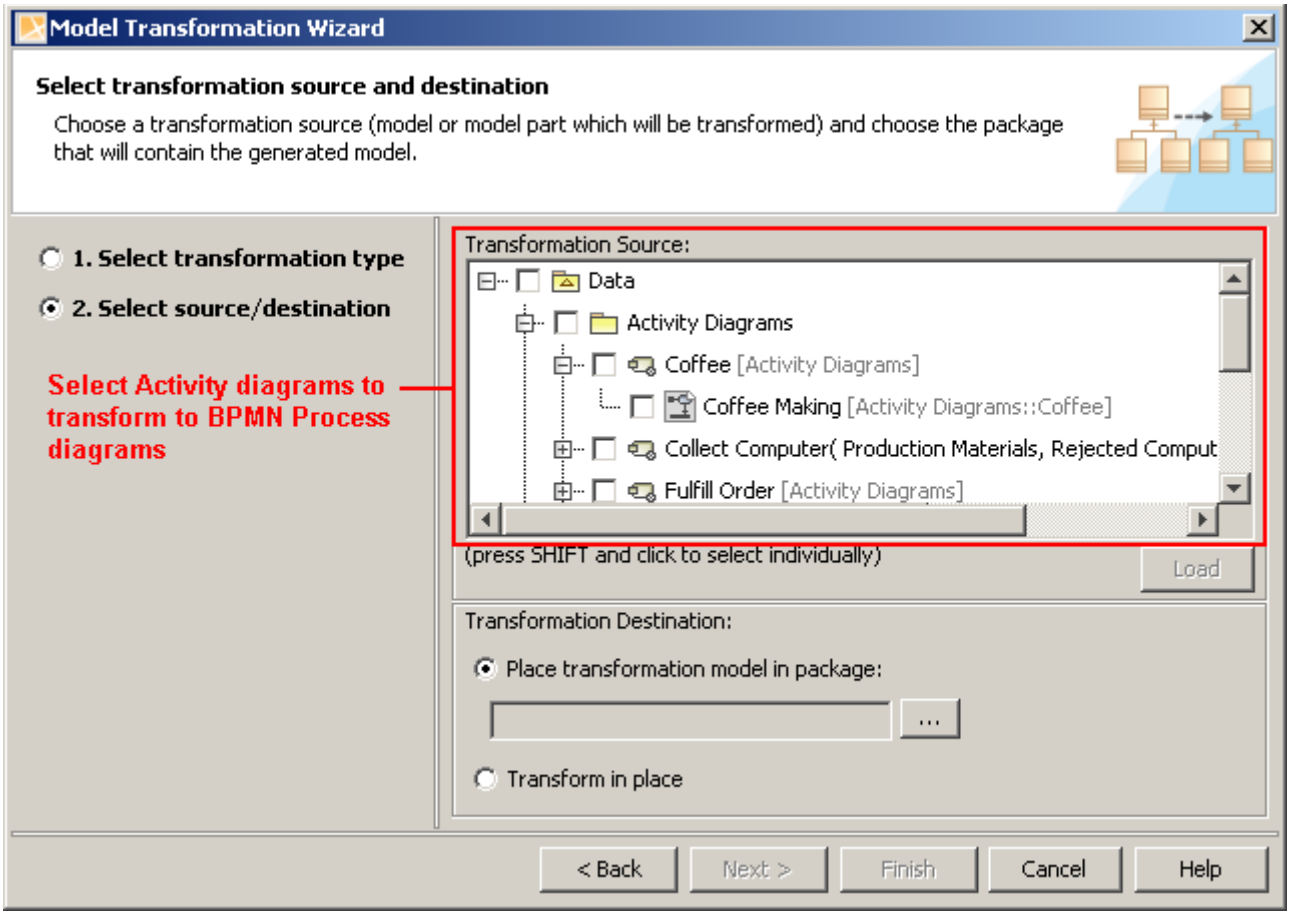
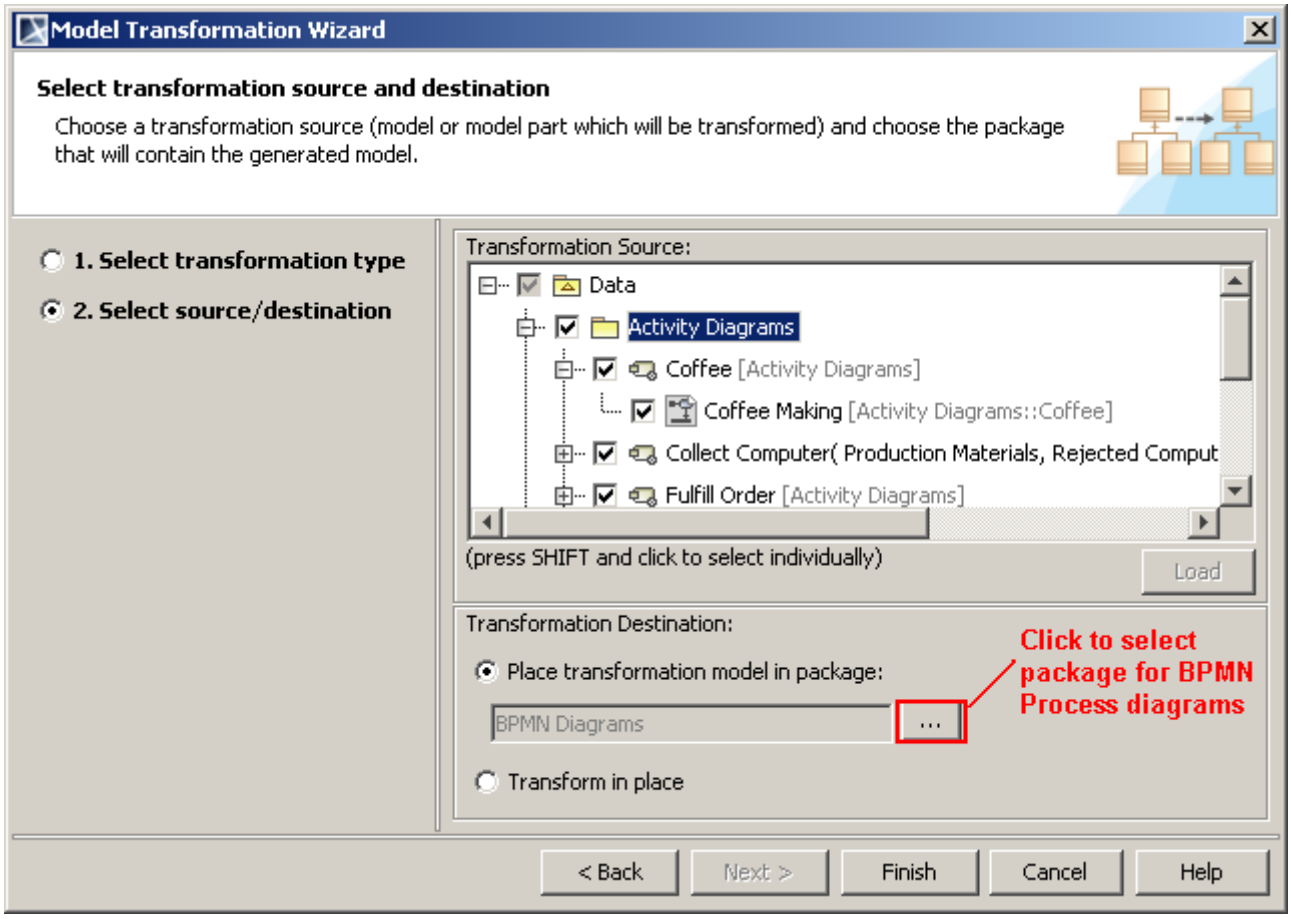


Figure 109 -- Model Transformation Wizard Step 2

TIP	Select the whole package to transform all diagrams contained in the package.

4. Click the "..." button after the **Place Transformation model in package** radio button to locate the place to save the BPMN Process diagram that willl be created (Figure 110). The **Destination Package** dialog will open (Figure 111).



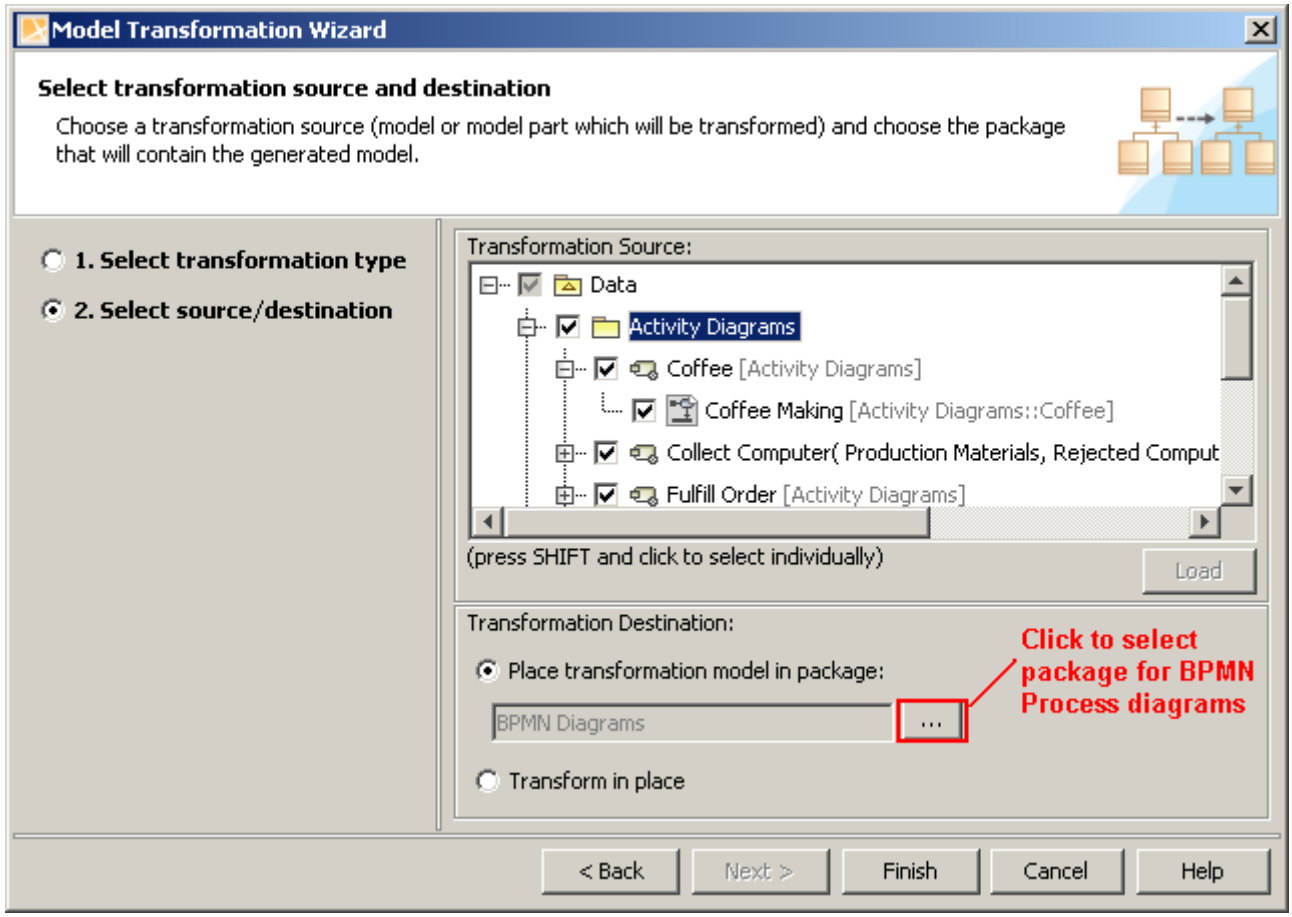


Figure 110 -- Selecting the Location to Save the BPMN Process Diagram

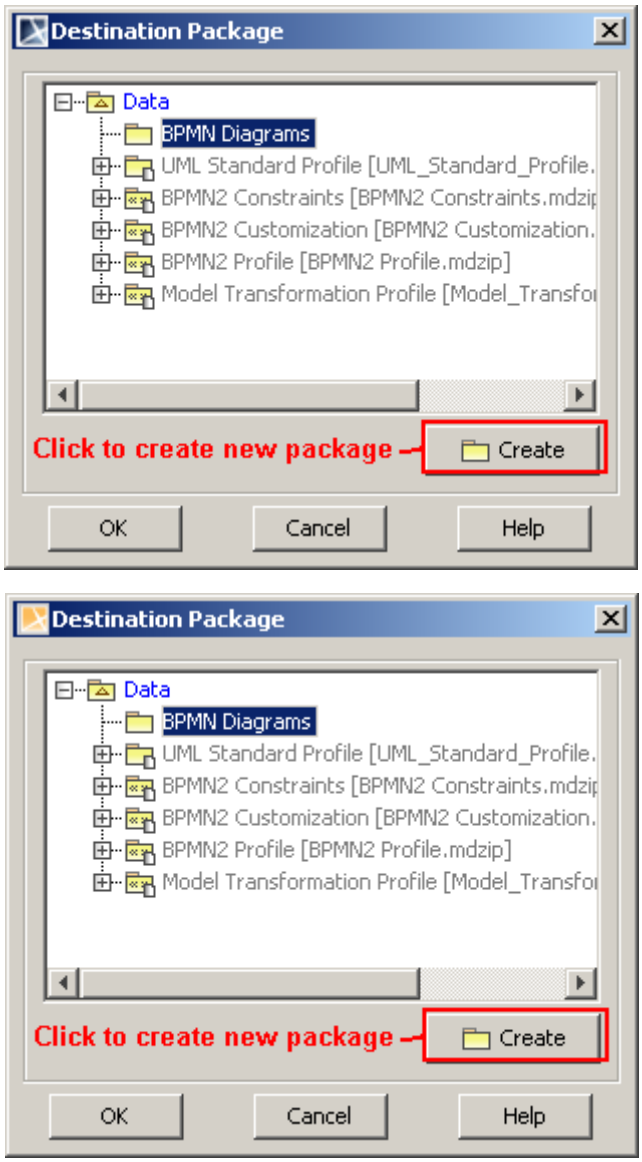


Figure 111 -- Confirming the Package Location

5. Select a package and click **OK**.

TIP	Click the **Create** button in the **Destination Package** dialog to create a new package.

IMPORTANT	• If you select **Transform in place** as the **Transformation Destination** option, your original activity diagram(s) will be lost after conversion. • It is recommended to select the **Place transformation model in package** option.

6. Click **Finish**.

To convert a BPMN Process diagram to an Activity diagram:

1. Either (i) right-click a BPMN Process diagram and select **Transform to UML Activity Diagram** (Figure 112) or

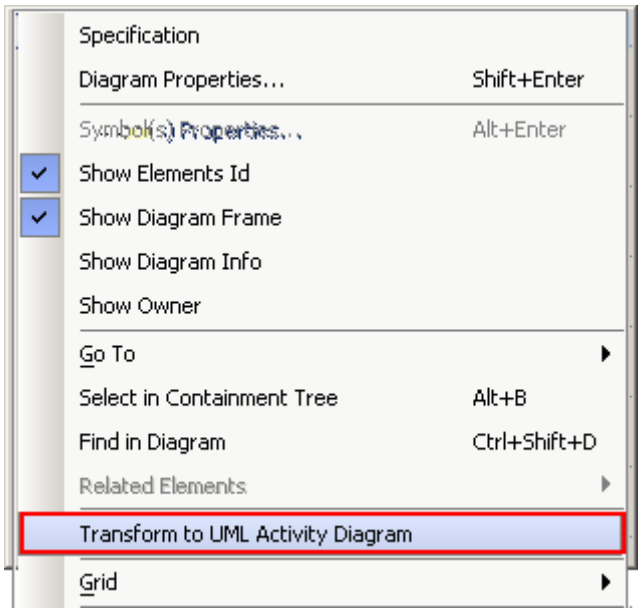


Figure 112 -- Transform to UML Activity Diagram Menu

(ii) Click **Tools** > **Model Transformations** on the main menu (Figure 113).

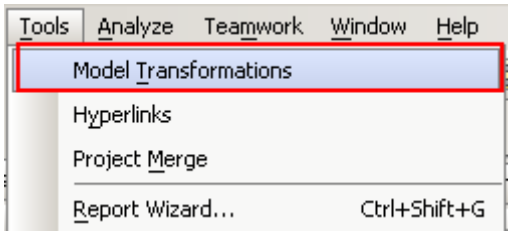


Figure 113 -- Model Transformations Menu

2. Select the **BPMN Process Diagram to UML Activity Diagram** transformation type and click **Next** (Figure 114).

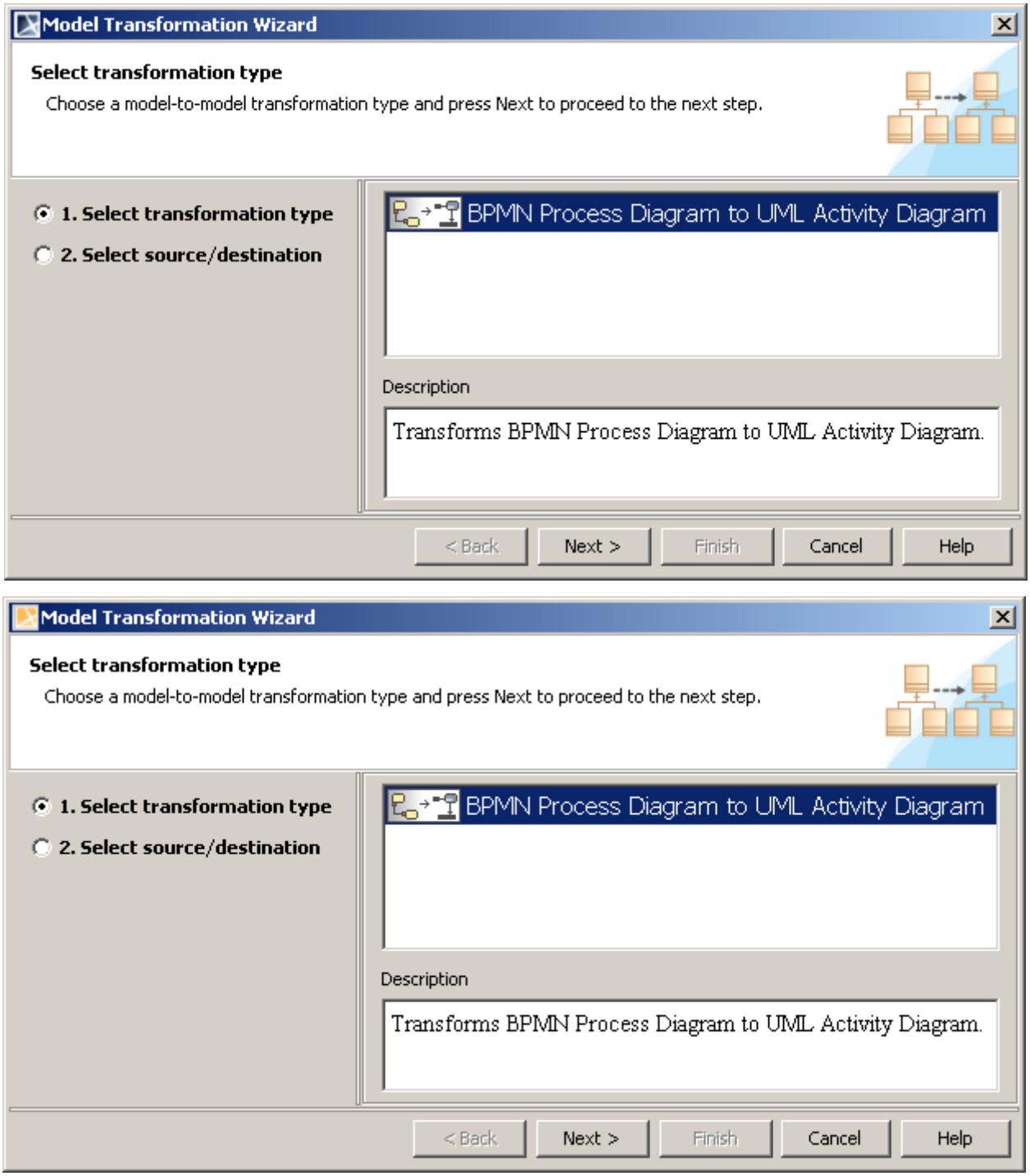


Figure 114 -- Model Transformation Wizard Step 1

NOTE	A dialog may open to inform you that the required profiles will not be used in the project. Click **Yes** to load the profiles required for the transformation.

3. Select a BPMN Process diagram that will be transformed to a UML Activity Diagram (Figure 115).

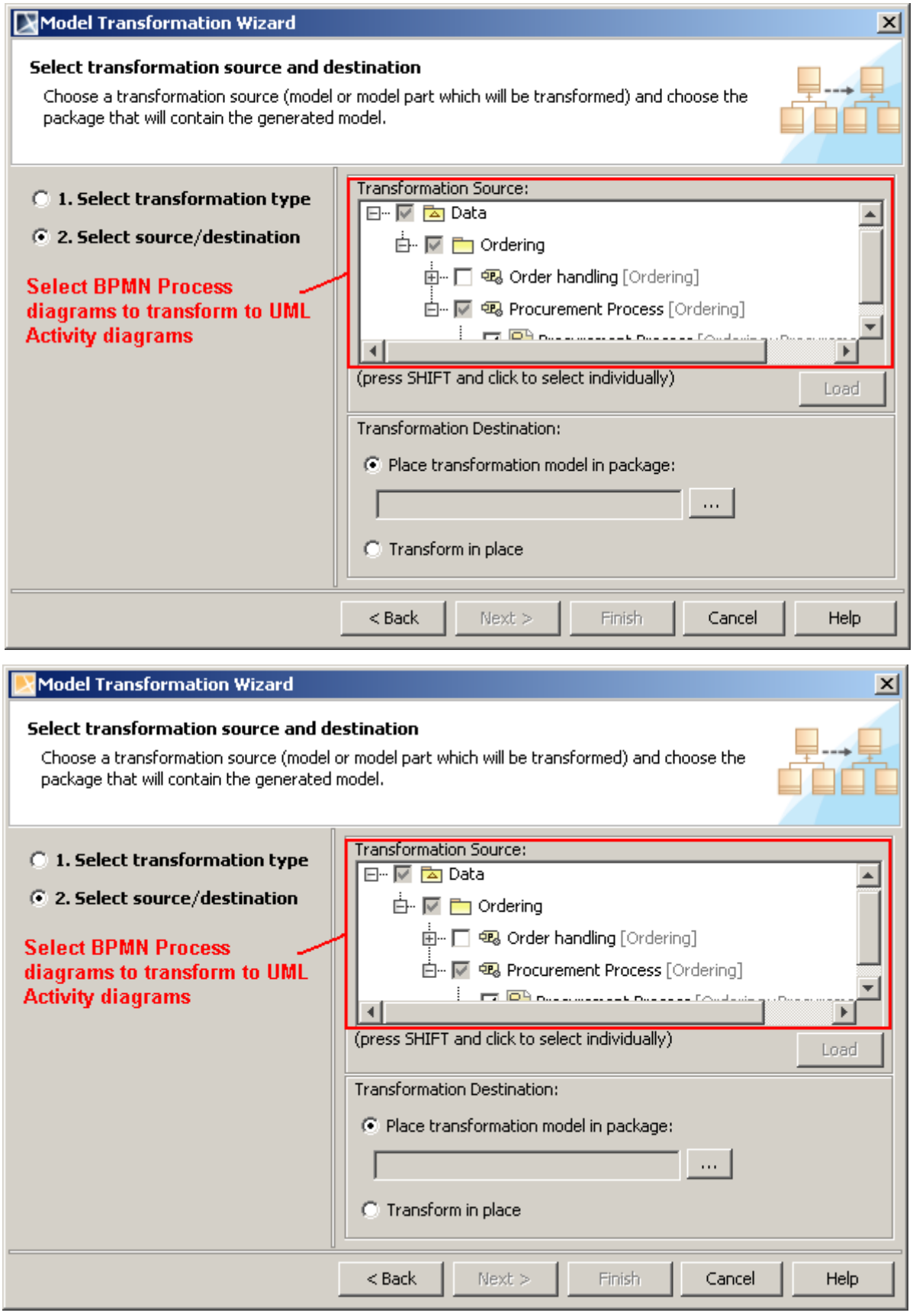


Figure 115 -- Model Transformation Wizard Step 2

TIP	Select the whole package to transform all diagrams contained in the package.

4. Click the "..." button next to the **Place Transformation model in package** text box to locate the place to save the Activity diagram that willl be created (Figure 116). The **Destination Package** dialog will open (Figure 117).

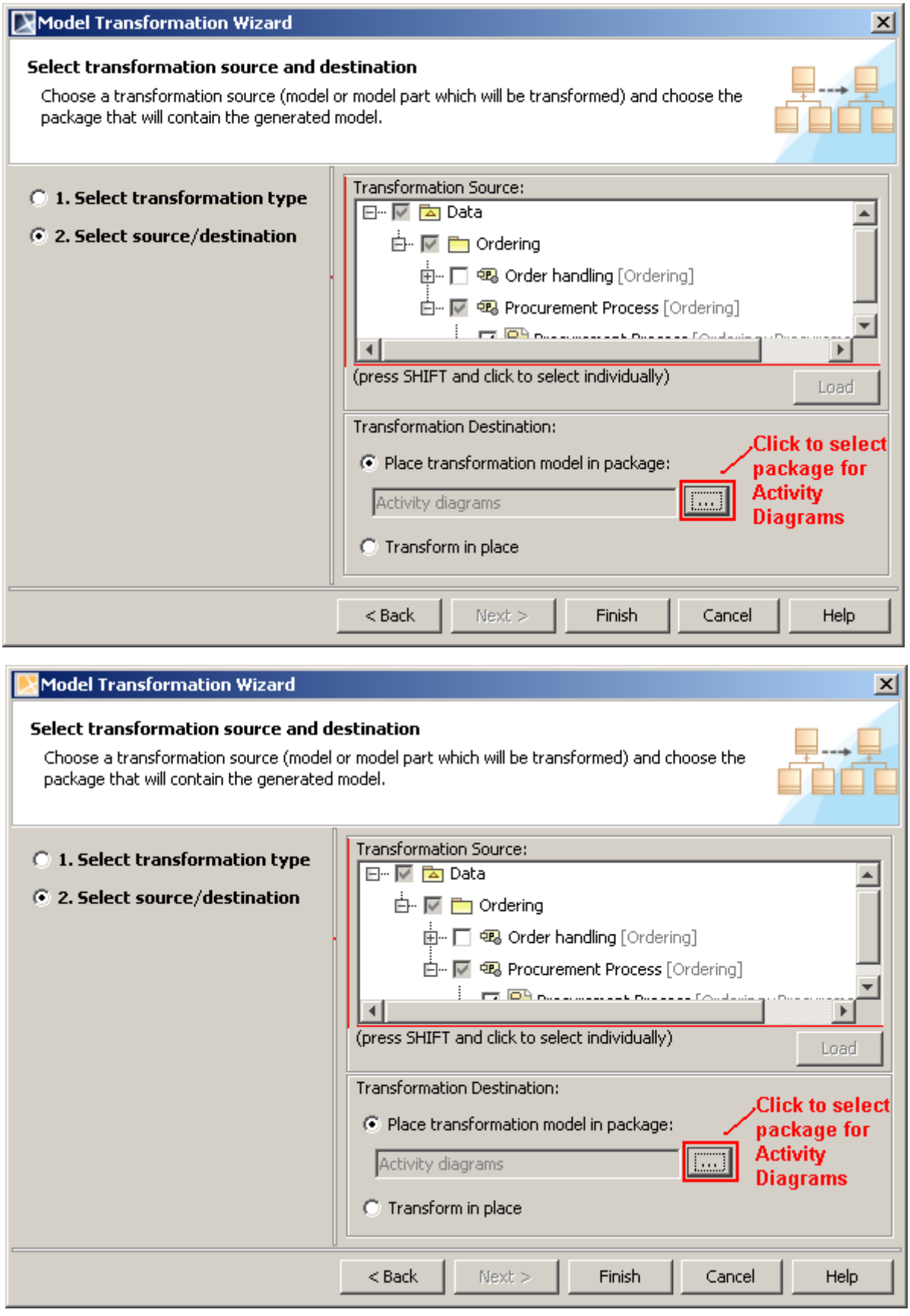


Figure 116 -- Selecting the Location to Save the Activity Diagram

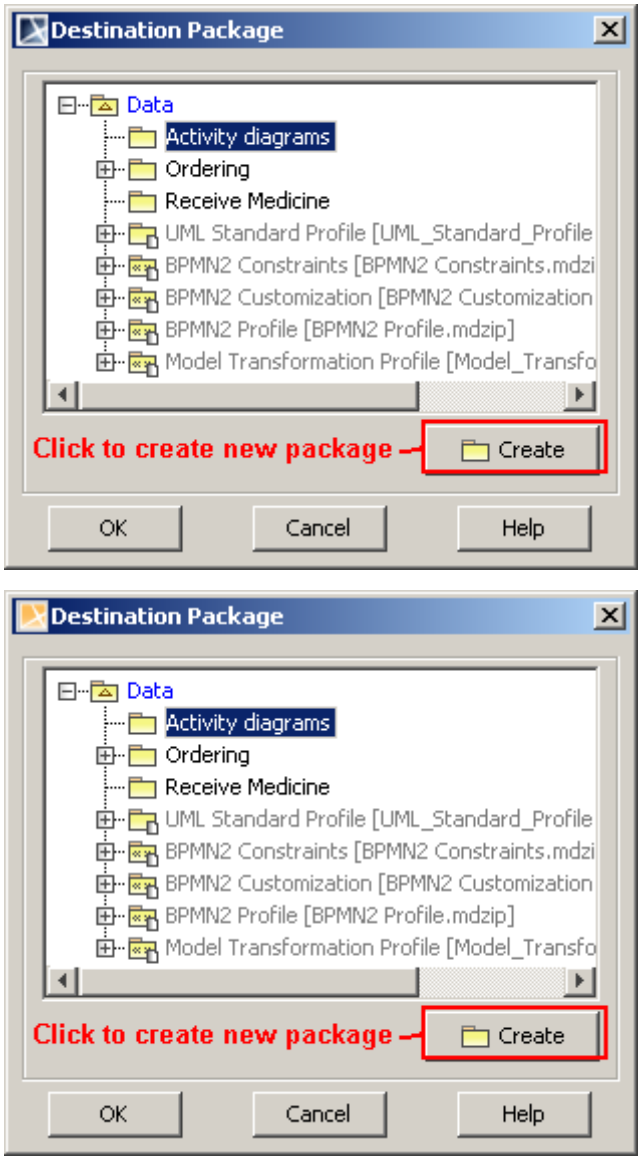


Figure 117 -- Confirming the Package Location

5. Select a package and click **OK**.

TIP	Click the **Create** button in the **Destination Package** dialog to create a new package.

IMPORTANT	• If you select **Transform in place** as the **Transformation Destination** option, your original BPMN Process diagram will be lost after conversion. • It is recommended to select the **Place transformation model in package** option.

6. Click **Finish**.

3.6 Exporting Models to XPDL

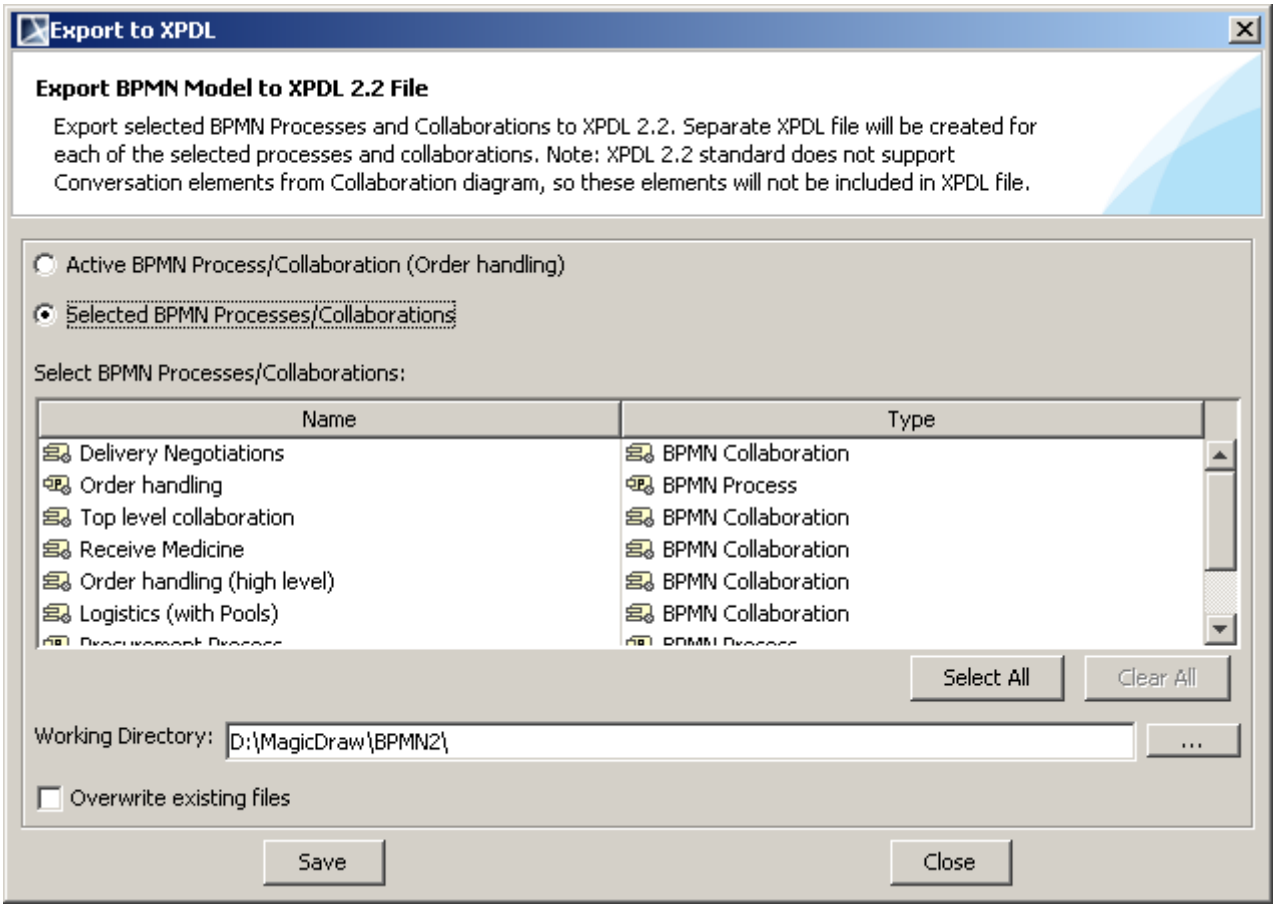
Cameo Business Modeler for MagicDraw supports BPMN 2.0 model export to XPDL 2.2.

The support for XPDL 2.2 allows you to export your BPMN Processes and Collaborations to XPDL 2.2 format. A separate XPDL file will be created for each exported BPMN Process or Collaboration diagram.

IMPORTANT!	XPDL 2.2 does not support BPMN Choreography and Conversation elements from BPMN Collaborations.

To export multiple BPMN Processes or Collaborations to XPDL:

1. Click **File** > **Export To** > **XPDL File** on the main menu. The **Export to XPDL** dialog will open (Figure 118).



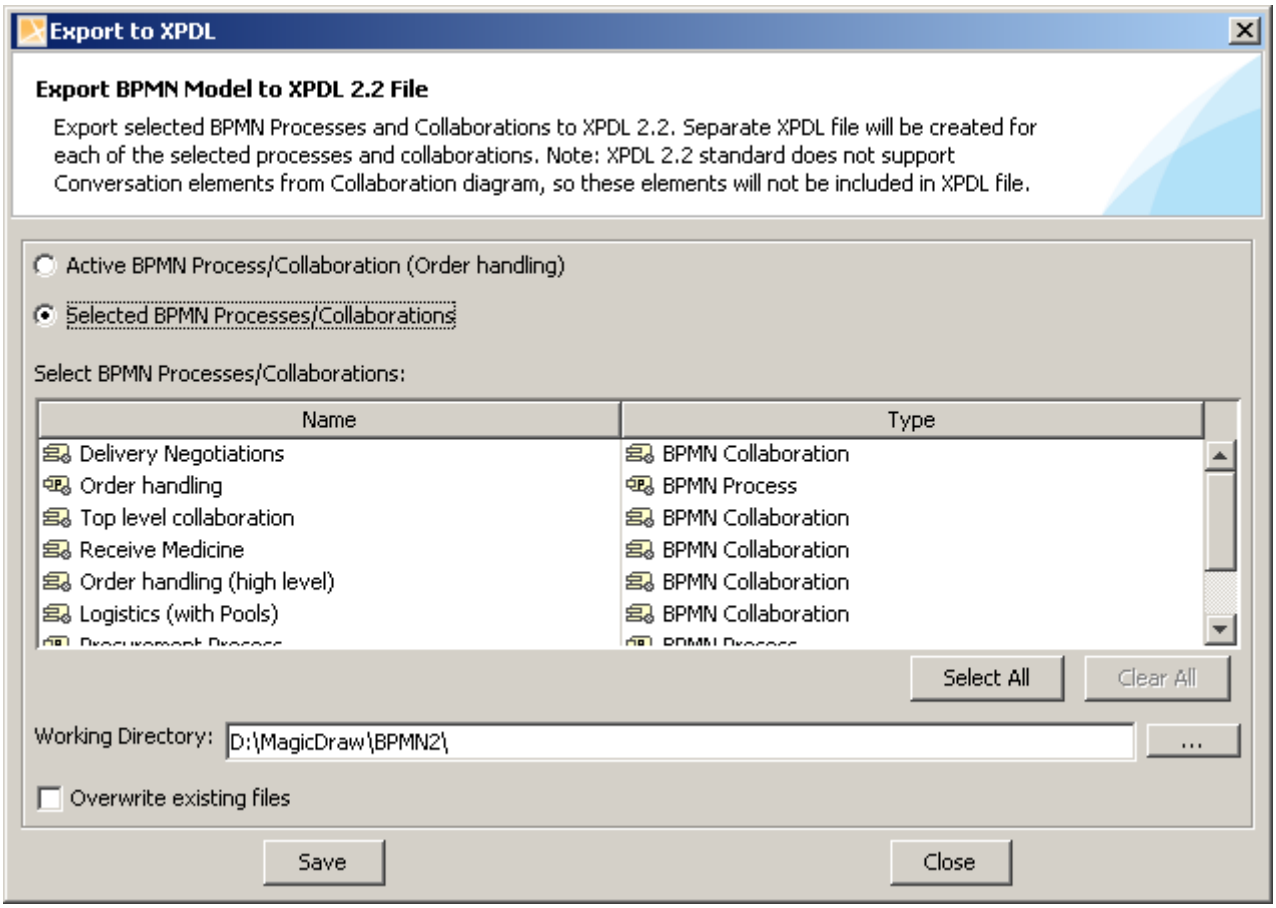


Figure 118 -- Exporting Multiple BPMN Processes or Collaborations to XPDL

2. Select the **Selected BPMN Processes/Collaborations** radio button and choose the diagrams you want to export from the BPMN Processes/Collaborations list.

TIP!	Press and hold down the **Ctrl** key to select multiple BPMN Processes or Collaborations.

3. Type the name of a destination directory in the **Working Directory** box or click the "**...**" button to browse for a destination folder.
4. Click **Save**.

To export an active BPMN Process/Collaboration to XPDL:

1. Either:

   (i) Click **File** > **Export To** > **XPDL File** on the main menu, or

   (ii) Open the BPMN Process/Collaboration shortcut menu in the browser and click **Tools** > **Export To XPDL File**.

2. The **Export to XPDL** dialog will open (Figure 119)

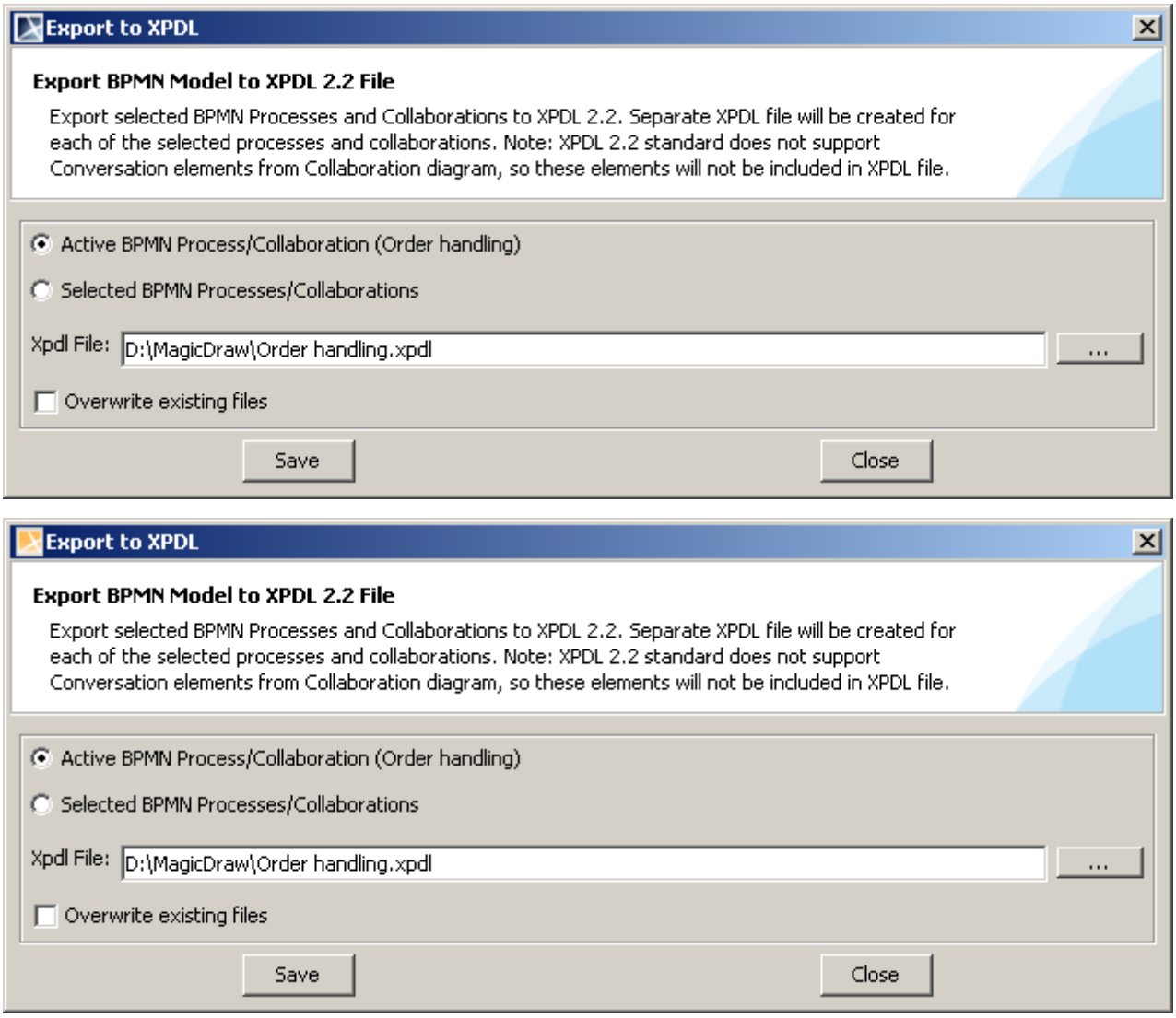


Figure 119 -- Exporting a Selected BPMN Process/Collaboration to XPDL

3. Select the Active BPMN Process/Collaboration radio button
4. Type the name of the destination directory and the XPDL filename in the **Xpdl File** box or click the "**...**" button to browse for a destination folder.
5. Click **Save**.

3.7 Importing from BPMN 1.1

The MagicDraw 16.8 and its earlier versions support for BPMN 1.1 and Business Process diagram allows you to model business processes using the BPMN 1.1 notation.

IMPORTANT!	The support for BPMN 1.1 and Business Process diagram will no longer be available starting from the next version of MagicDraw. It will be replaced by the Cameo Business Modeler support for the BPMN 2.0 specification.

You can convert your MagicDraw projects containing old BPMN profile and Business Process diagrams to the new BPMN 2.0 standard. A backup file will be created for the project conversion. This backup file allows you to find your BPMN 1.1 models whenever you need them.

You can convert a project to BPMN 2.0 by either:

(i) Opening a MagicDraw project that contains the BPMN 1.1 profile and/or Business Process diagram, or

(ii) Importing a BPMN 1.1 project

(i) To convert a BPMN 1.1 project to BPMN 2.0 by opening it:

1. Open a MagicDraw project that contains the BPMN Profile or Business Process diagram. A **Question** dialog will open (Figure 120).

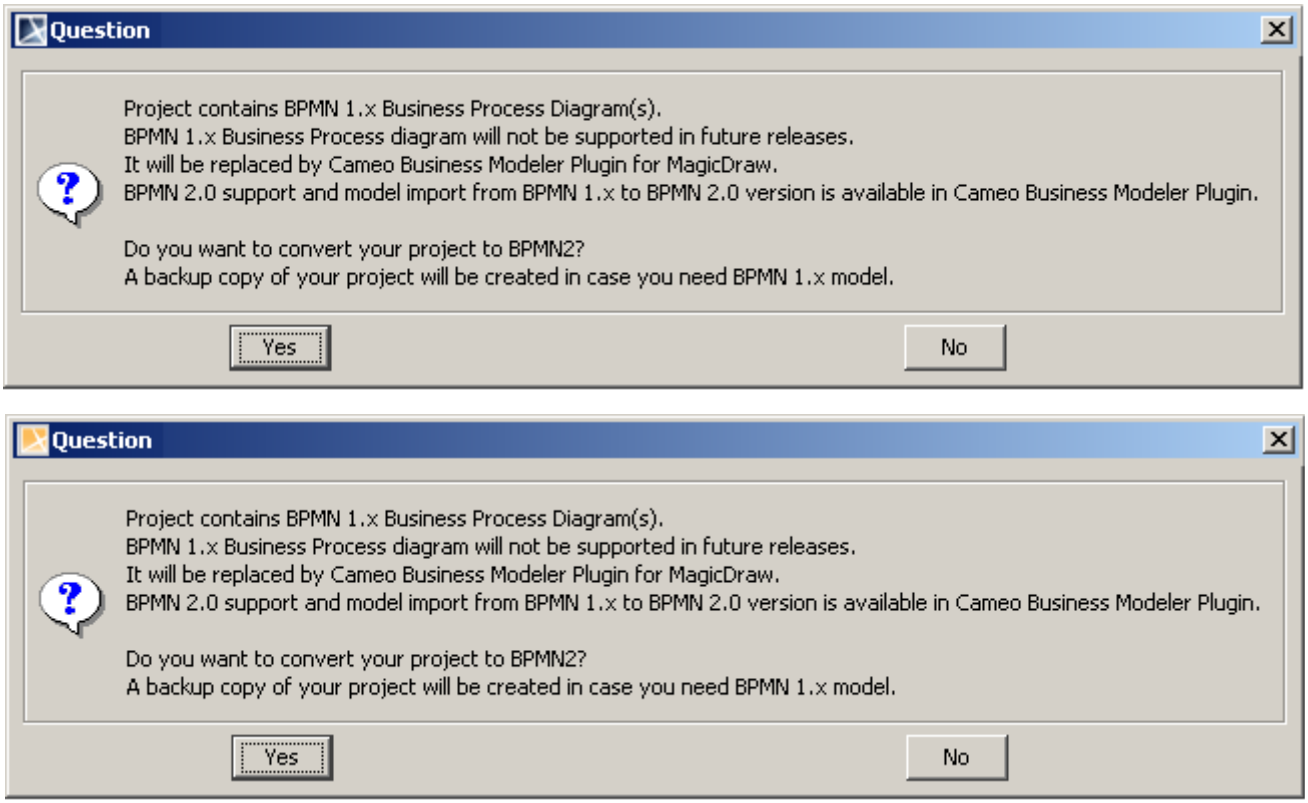


Figure 120 -- Question Dialog

2. Click **Yes** to convert the project.
3. Click **OK**.

(ii) To convert a BPMN 1.1 project to BPMN 2.0 by importing it:

1. Click **File** > **Import From** > **BPMN 1.1 Project** on the main menu. The **Open BPMN 1.1 Project** dialog will open.
2. Select a project that contains the Business Process diagram and click **Open**.
3. Click **OK**.

IMPORTANT!	A backup file **project_name_bpmn1.1.bak** will be created after the project has been migrated. It will include the BPMN 1.1 project before migration.

To convert a Teamwork BPMN 1.1 project to BPMN 2.0:

1. Click **File** > **Import From** > **BPMN 1.1 Project** on the main menu. A **Question** dialog will open (Figure 121).

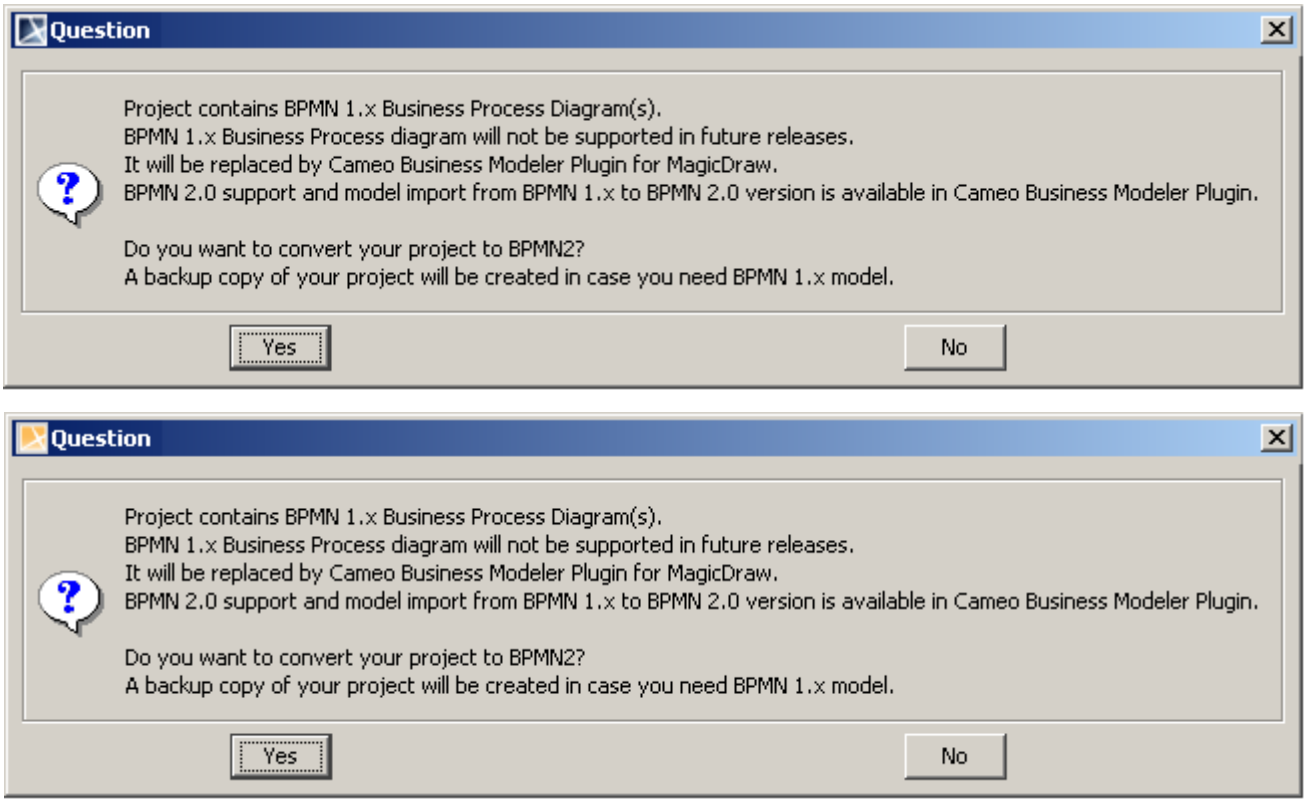


Figure 121 -- Question Dialog

2. Click **Yes** to convert the project. Another **Question** dialog will open to inform you that that all elements will be locked (Figure 122).

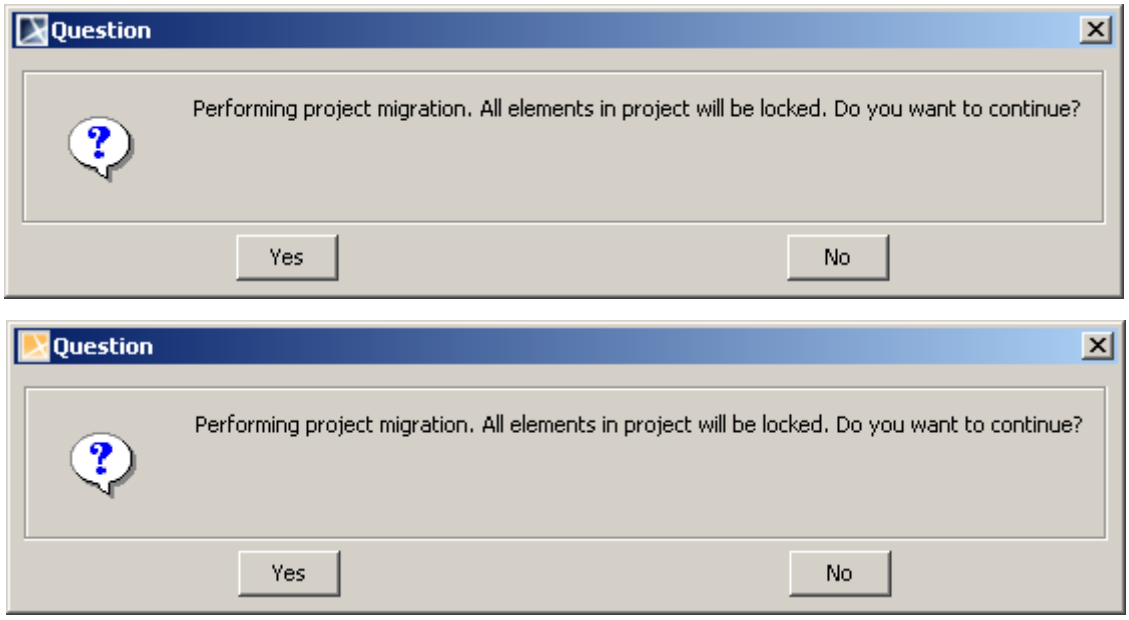


Figure 122 -- Question Dialog

3. Click **Yes**

IMPORTANT	Before migrating a Teamwork project to BPMN 2.0, make sure that other users do not lock the BPMN elements.

NOTE	A backup file for a Teamwork project will not be created when migrating the project to BPMN 2.0. Use a Teamwork version as a backup copy that will include the BPMN 1.1 Business Process diagrams before migrating the project.

3.8 Integration with Cameo SOA+

The BPMN and SoaML standards compliment each other. Together they describe organizations, information, and behavior from different perspectives: SoaML defines the structure of collaborating systems, and BPMN describes the dynamic behavior.

IMPORTANT!	Cameo SOA+ Plugin should be installed in order to use the BPMN and SoaML standards together.

The Cameo Business Process Modeler integration with Cameo SOA + Plugin allows you to use the BPMN and SoaML standards together. The following are the advantages of using SoaML elements:

- A BPMN Pool can represent an SoaML Participant
- SoaML elements can be selected as the BPMN Data Object type
- SoaML elements can be selected as the BPMN Message type
- BPMN Elements can be traced to SoaML elements.
- SoaML elements can be traced to BPMN elements.

To create a new BPMN-SoaML project:

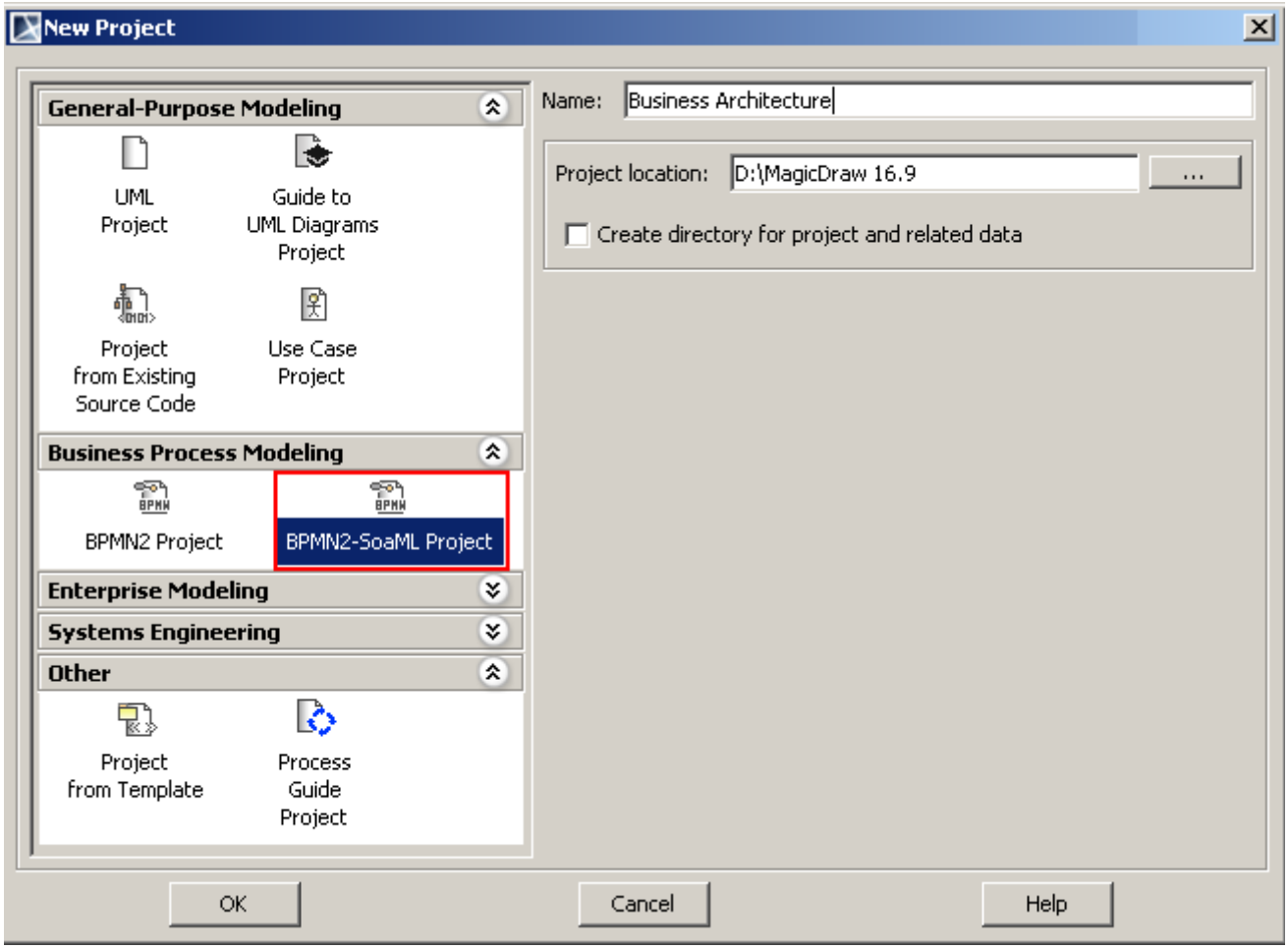
1. Do any of the following:

   (i) Click **File** > **New Project** on the main menu.

   (ii) Click the **New Project** button on the main toolbar, or

   (iii) Press **Ctrl** + **N**.

2. The **New Project** dialog will open. Click the **BPMN2-SoaML Project** icon (Figure 123).



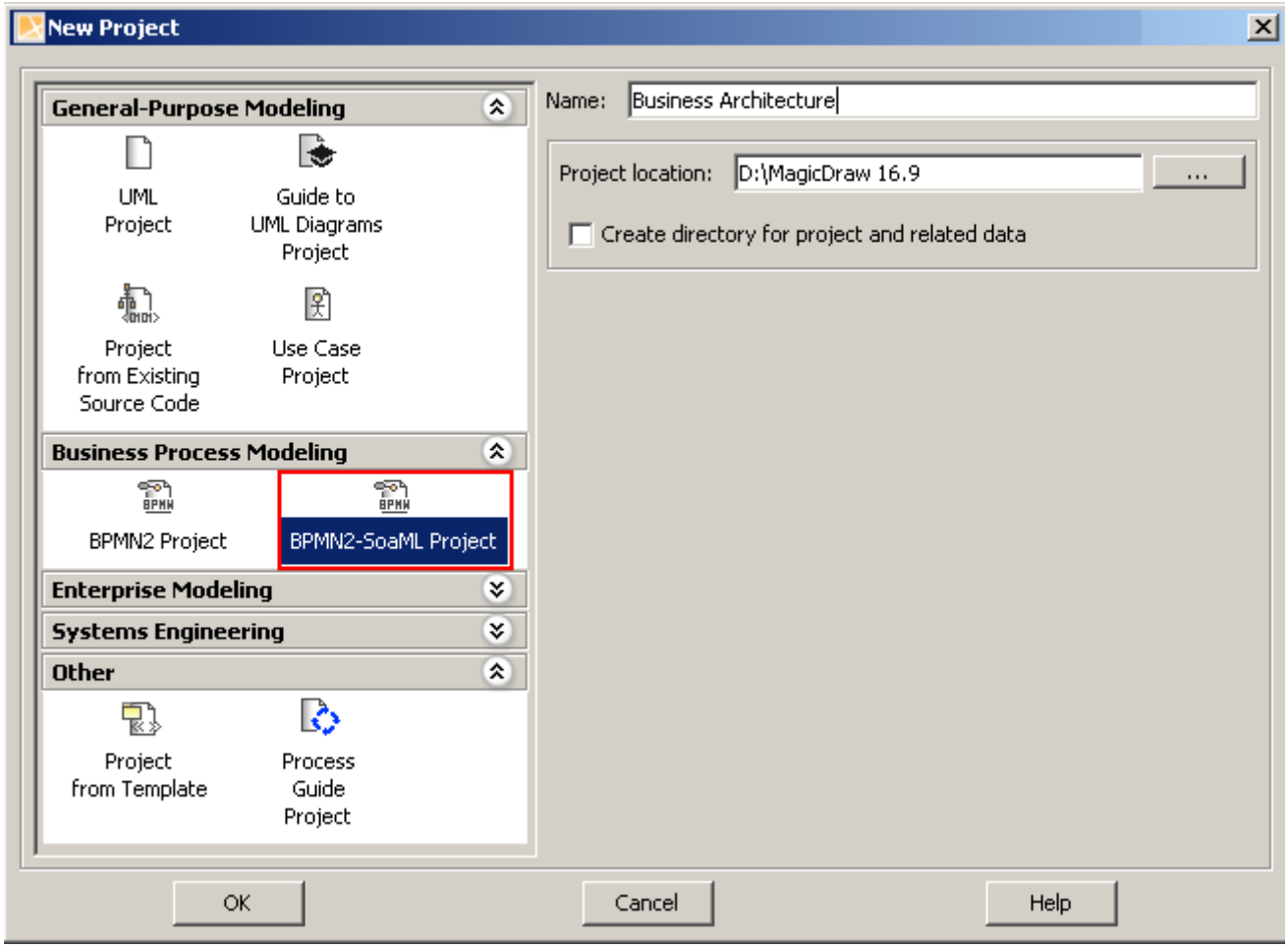


Figure 123 -- New Project Dialog

3. Type a filename in the **Name** box.
4. Click the "**...**" button to locate where to store the project to be created.
5. Click **OK**.

NOTE	If the Business Modeler perspective is not enabled, a message offering to change the perspective will open. Click **Yes** to switch to the Business Modeler perspective supporting the BPMN2 diagrams.

To use the SoaML concepts in an existing BPMN2 project:

1. Click **File** > **Use Module** on the main menu. The **Use Module** dialog will open (Figure 124).

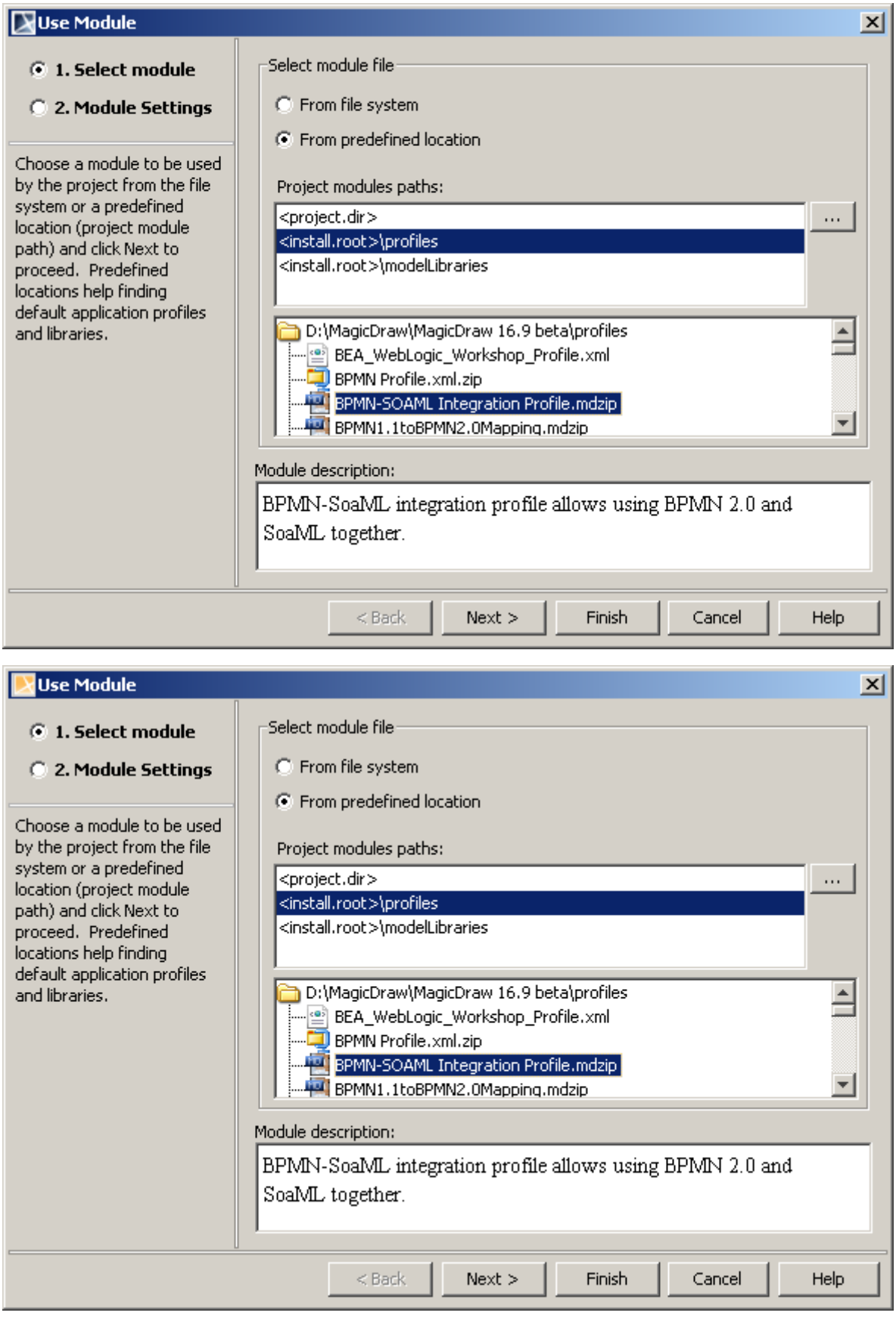


Figure 124 -- Use Module Dialog

2. Select the **BPMN-SOAML Integration Profile.mdzip** module file.

3. Click **Finish**.

To create a pool that represents an SoaML participant:

1. Create a Pool in the BPMN Process or BPMN Collaboration diagram.
2. Select an SoaML Participant as the participant referenced by a Pool (see procedure "To specify a model element represented by a Pool, do one of the following:").

To select an SoaML element as a BPMN Data Object type:

1. Create a Data Object in the BPMN Process or BPMN Collaboration diagram.
2. Open the **Data Object Specification** dialog and select an SoaML element as the property Type value.

To create a Message typed by an SoaML element as the Message Flow:

1. Select a Message Flow in the BPMN Collaboration or BPMN Process diagram. The Smart Manipulators toolbar will open.
2. Click the **Referenced Messages** button. Create a new message as described in the To create a Message for a Message Flow: steps.
3. Open the **Message Specification** dialog. Select an SoaML element as the property Type value.

The Traceability relations between the BPMN and SoaML elements can be reviewed and defined in the **BPMN-SOAML Traceability** tab of the Element specification dialog. The **BPMN-SOAML Traceability** tab is available for the following elements:

- BPMN Activities
- Events
- Gateways
- Data Objects
- SoaML and UML Classifiers
- Ports

Two types of traceabilitty relations are defined in MagicDraw:

(i) Relations to BPMN model elements

(ii) Relations to SoaML model elements

Table 13 below lists the BPMN-SoaML traceability relations to BPMN elements that are available in MagicDraw.

Table 13 -- BPMN-SoaML Traceability Relations to BPMN Elements

Property Name	Function
BPMN Choregraphy Diagrams	To select the BPMN Choreography diagrams that describe the current element.
BPMN Collaboration Diagrams	To select the BPMN Collaboration diagrams that describe the current element.
BPMN Interface	To select the BPMN Interfaces that correspond to the current element.
BPMN Participants	To select the BPMN Participants that correspond to the current element.

Property Name	Function
Choreography	To select the BPMN Choreographies that describe the current element.
Collaboration	To select the BPMN Collaborations that describe the current element.

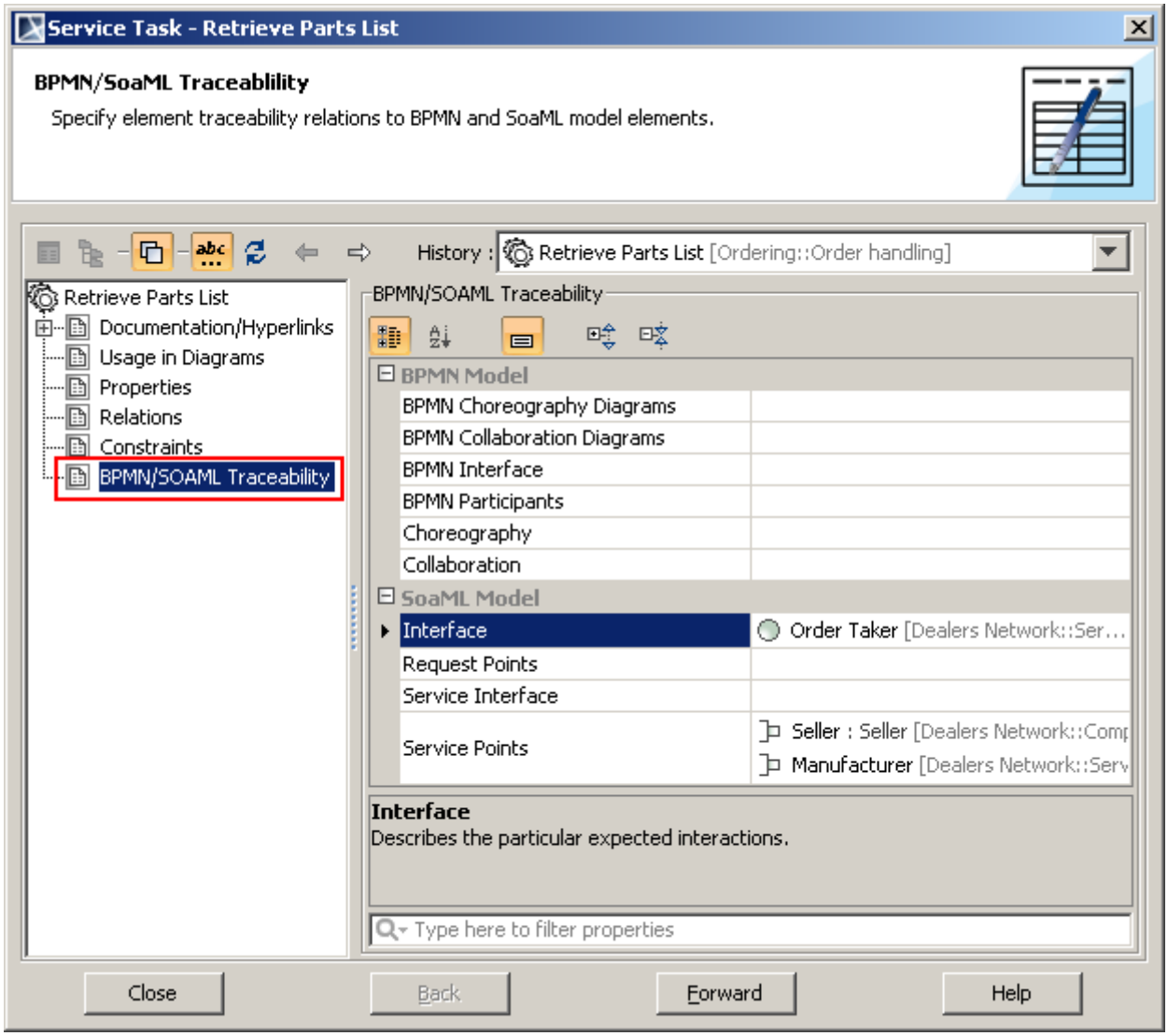
Table 14 below lists the BPMN-SoaML traceability relations to SoaML elements that are available in MagicDraw.

Table 14 -- BPMN-SoaML Traceability Relations to SoaML Elements

Property Name	Function
Interface	To select the Interface that is related to the current element.
Request Points	To select the SoaML request points that are related to current element.
Service Interface	To select the SoaML Service Interfaces that are related to the current element.
Service Points	To select the SoaML Service Points that are related to the current element.

To review or define the BPMN-SoaML element traceability relations:

- Open the element Specification dialog and click **BPMN/SOAML Traceability** (Figure 125).



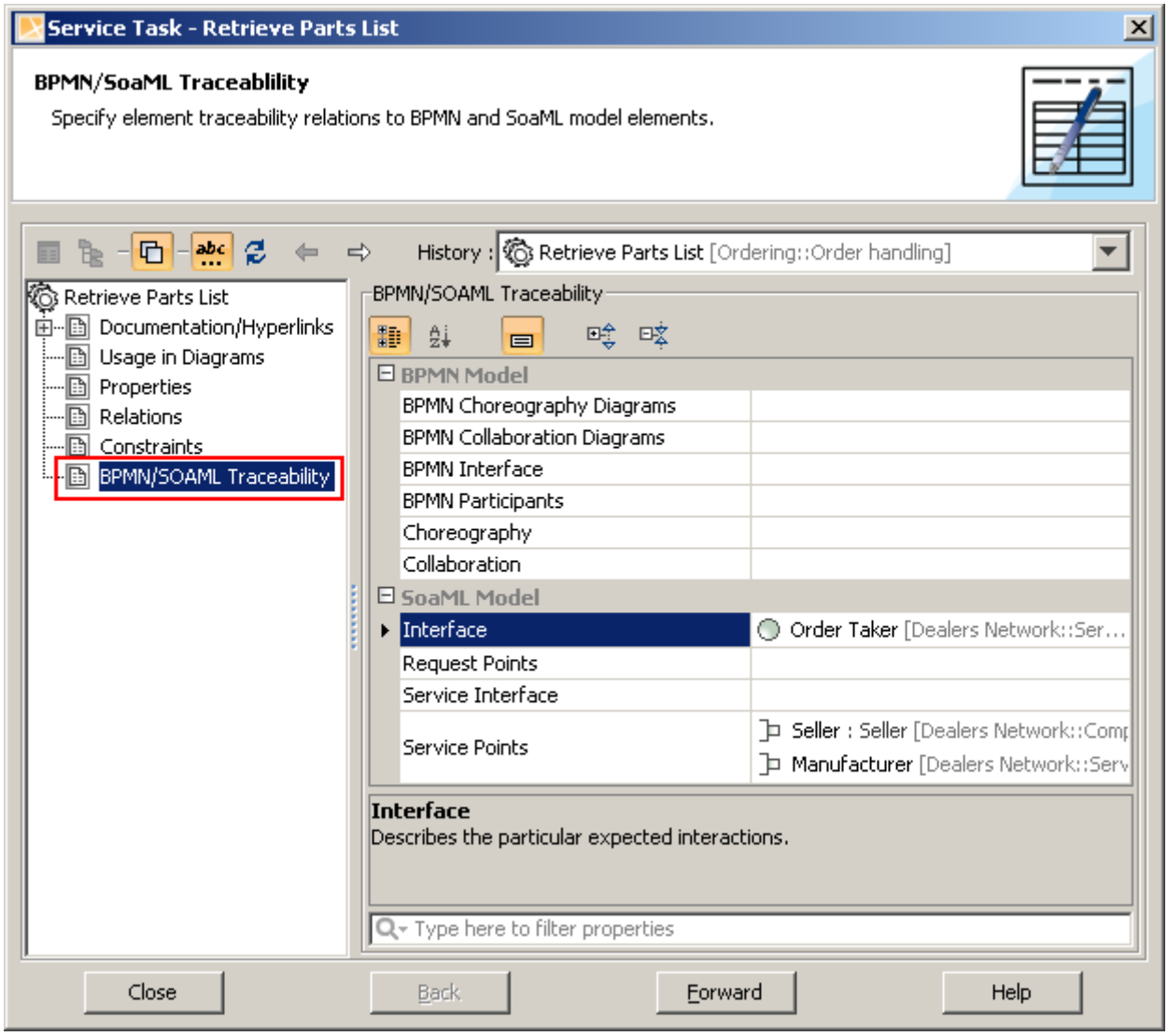
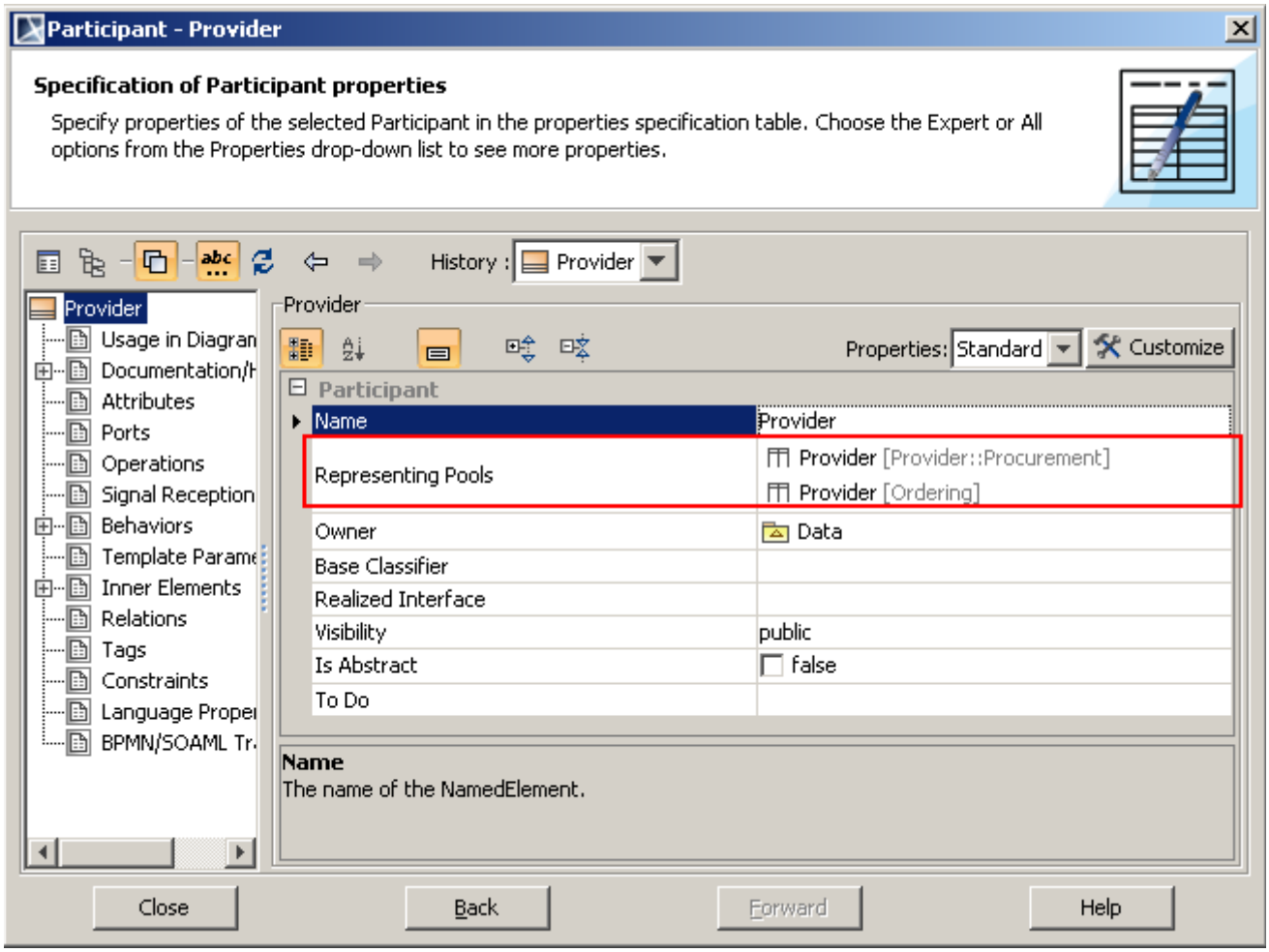


Figure 125 -- BPMN/SOAML Traceability Tab in the Element Specification Dialog

NOTE	The **BPMN/SOAML Traceability** tab is available for the following elements: • BPMN Activities • Events • Gateways • Data Objects • SoaML and UML Classifiers

To review the Pools that represent SoaML Participants:

1. Open the SoaML Participant specification dialog. The Property **Representing Pools** will show all the Pools that represent SoaML Participants (Figure 126).



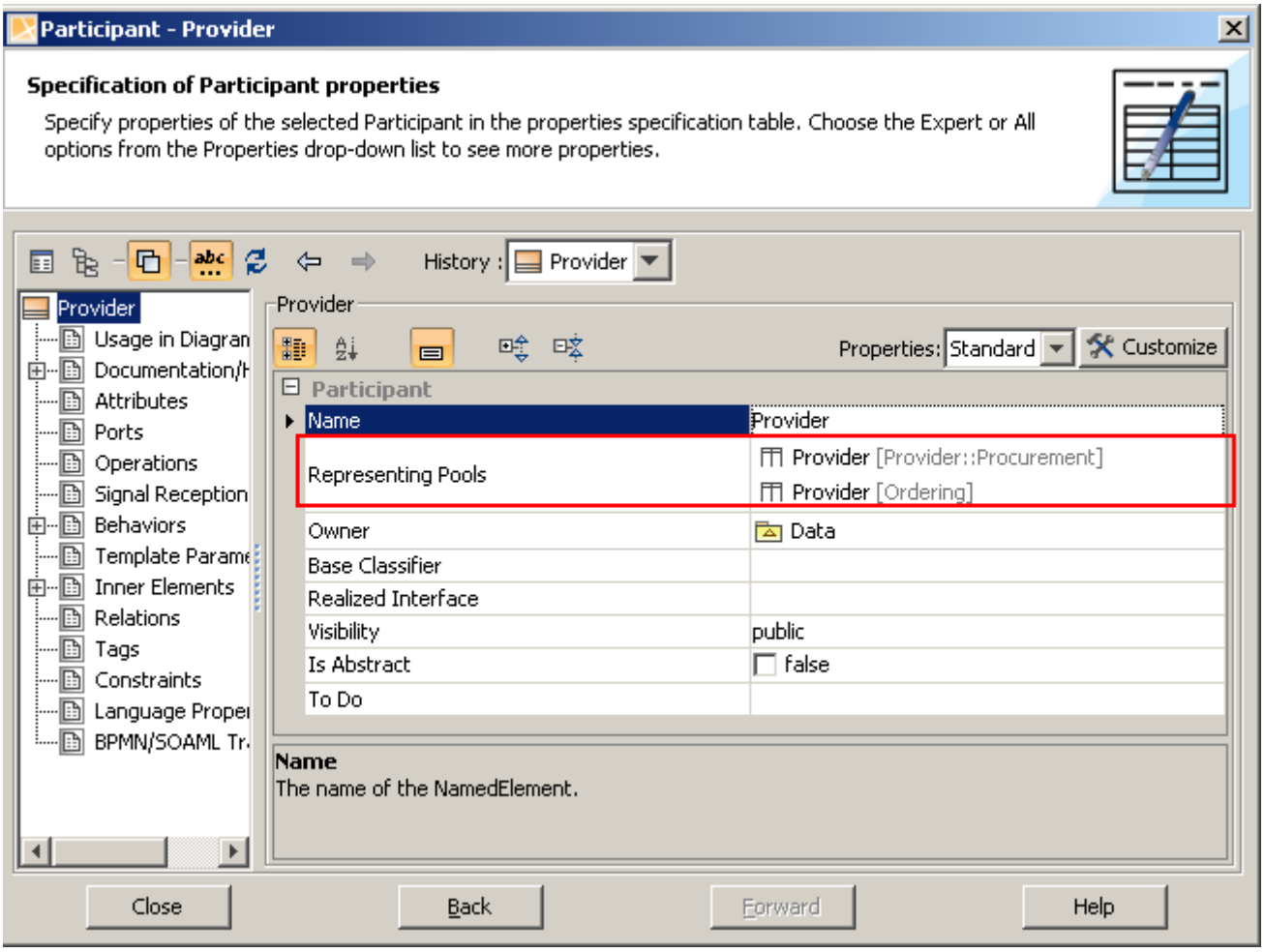


Figure 126 -- Representing Pools in the Participant Specification Dialog