

## Introduction

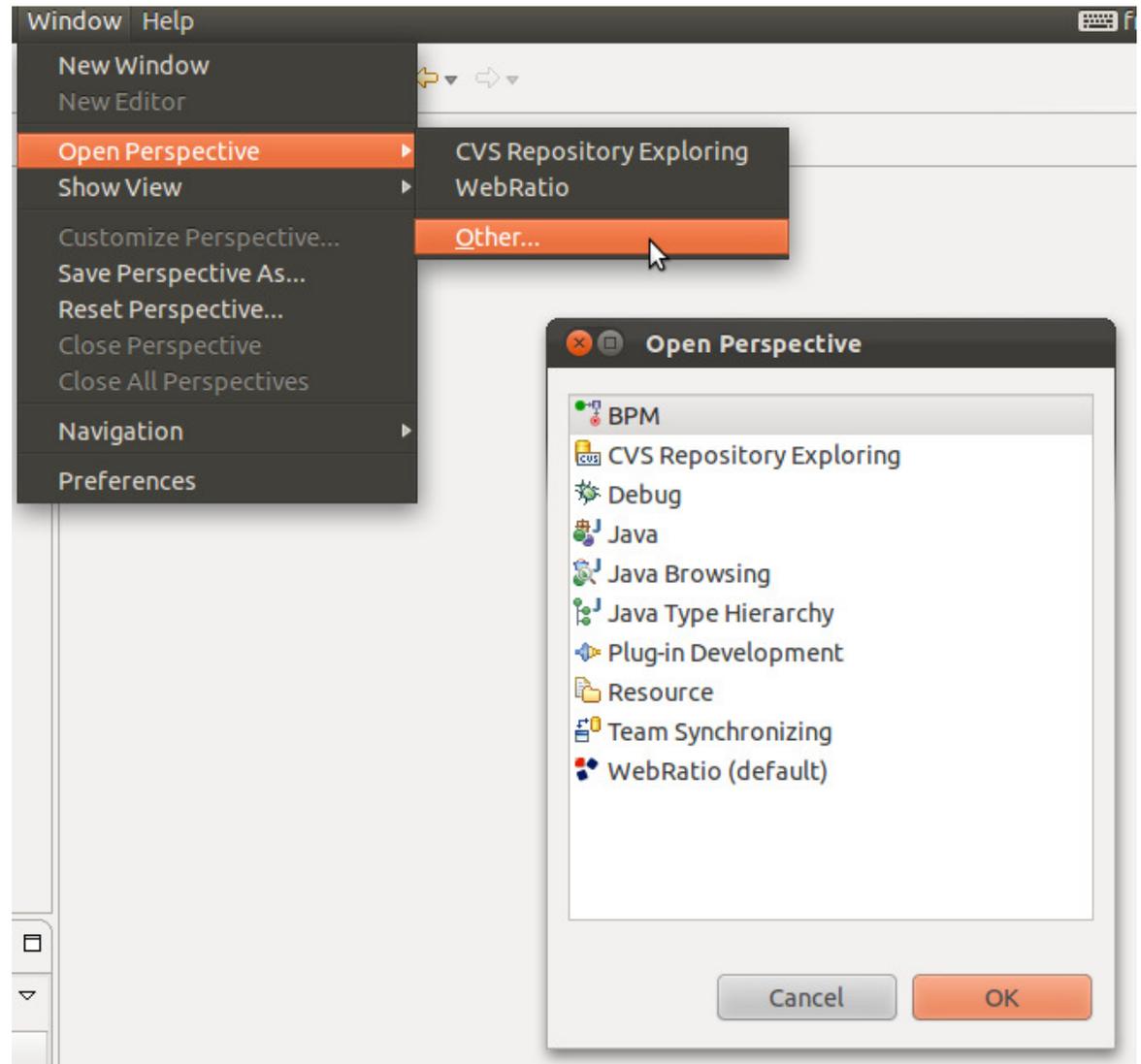
This tutorial will explain step by step how to create a simple Business Process Model. First the process to be modeled is introduced and explained, then you'll see how to realize it with WebRatio.

## The Travel Order Process

The process of Travel Order starts when any customer of the travel agency starts a new travel order selecting a travel. If the customer cancels his order the process ends and the order is aborted. If the customer confirms he must provide personal data, then the travel order is send to the Sales Department of the Agency where an operator must check the availability of the travel, meanwhile an Administrative Dep. operator checks the customer's solvency. Then the Sales Dep. operator can book the travel and the Administrative Dep. finally edit the bill, which ends the process.

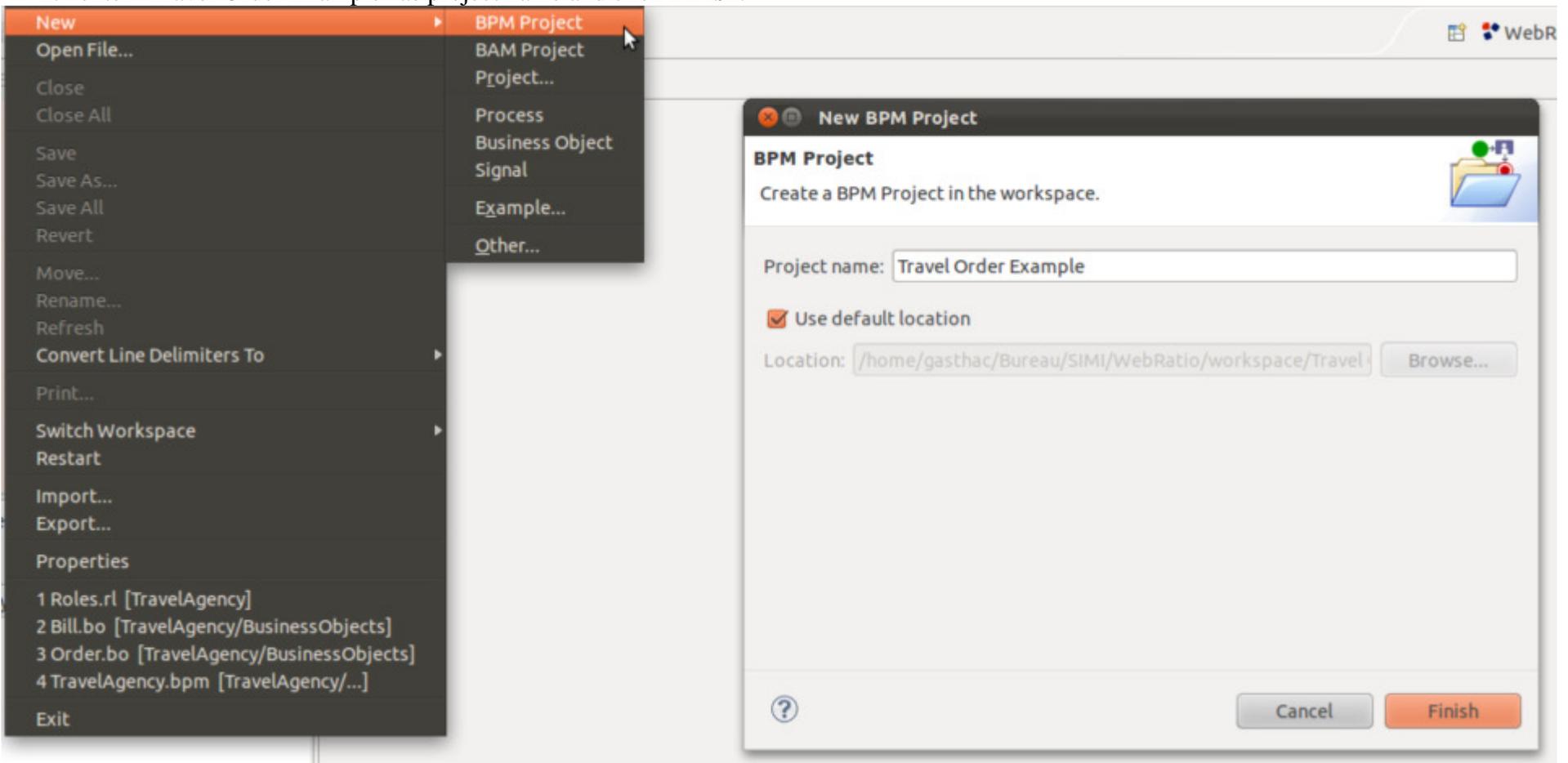
### Step 1: Define the process

According to the BPMN notation, the first step is to define the process and the actors the cooperate in it. After this step it's necessary to define the tasks accomplished by each actor in the process. If you're not in the BPM perspective, select Window > Open Perspective > BPM from the main menu.



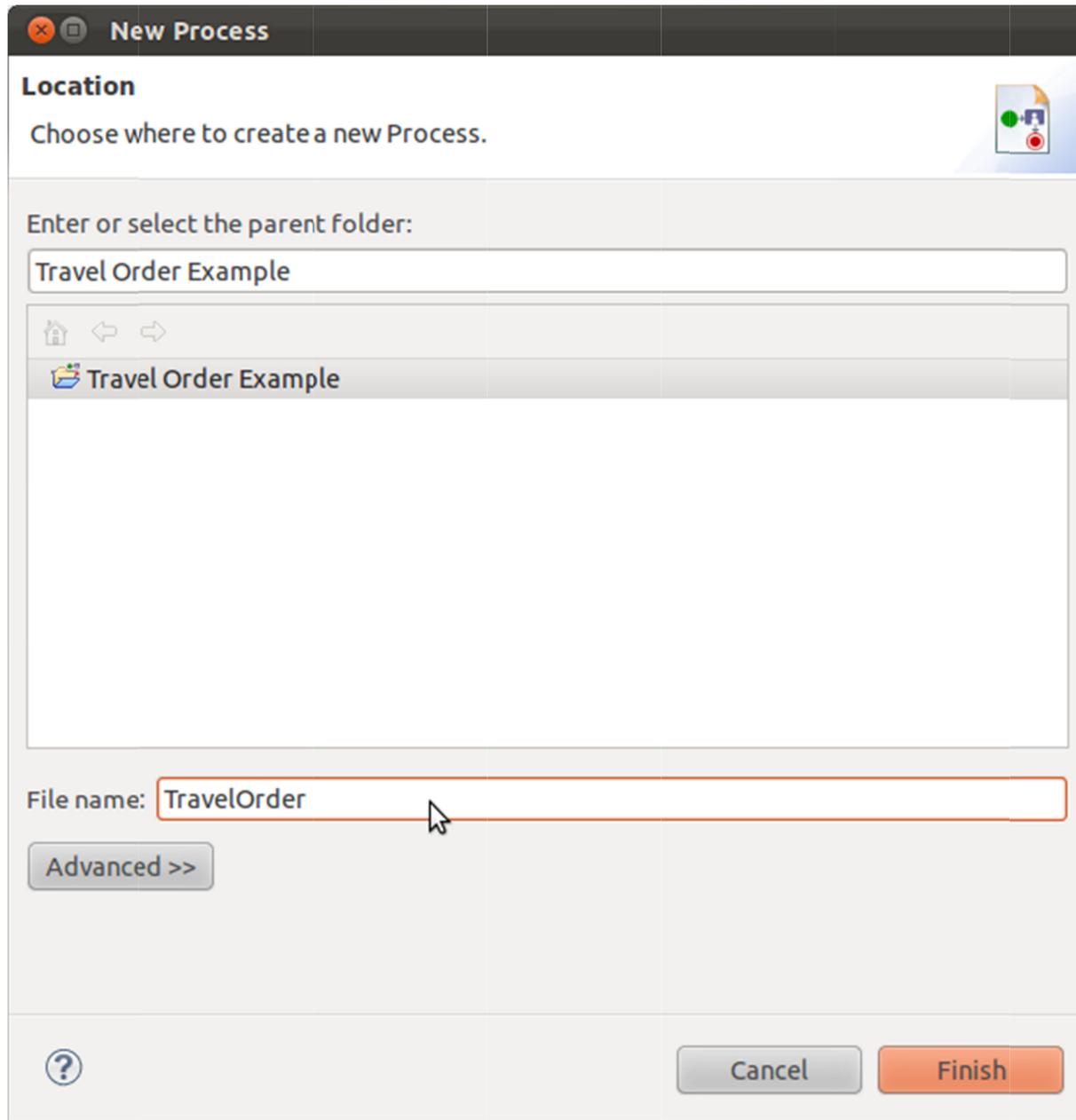
1. Let's create a new Project. This project will contain all the process models we would like to cooperate. In the Main Menu:

1. click on **File > New > BPM Project**
2. enter "Travel Order Example" as project name and click **Finish**.



2. Now it's possible to create a new Process Model within the Project. In the BPM Explorer View:

1. right click on the project and select **New > Process**
2. enter "TravelOrder" (avoiding spaces) as process name
3. press **Finish**



3. In the Process Model created you will define the representation of the process of the Travel Order using the BPMN. By default every new Process Model is created with a Pool already defined. We have to change it's name according to our process:

1. double-click on the Pool tab "Pool 1" at the top of the edit area
2. enter "Customer" as Pool name

The screenshot displays the BPMN editor interface. The main workspace shows a process diagram with a pool named "Customer" containing a lane named "Lane 1". Inside "Lane 1", there is a "Start Event 1" (green circle) connected to a "Task 1" (rounded rectangle) which is then connected to an "End Event 1" (red circle). The "Properties" panel on the left shows the selected "Pool 1 [pool1]" with the following details:

Property	Value
Id	pool1
Code	
Name	Pool 1
Lane Order	Lane 1
Parameters	
Instance Name	\$(process)

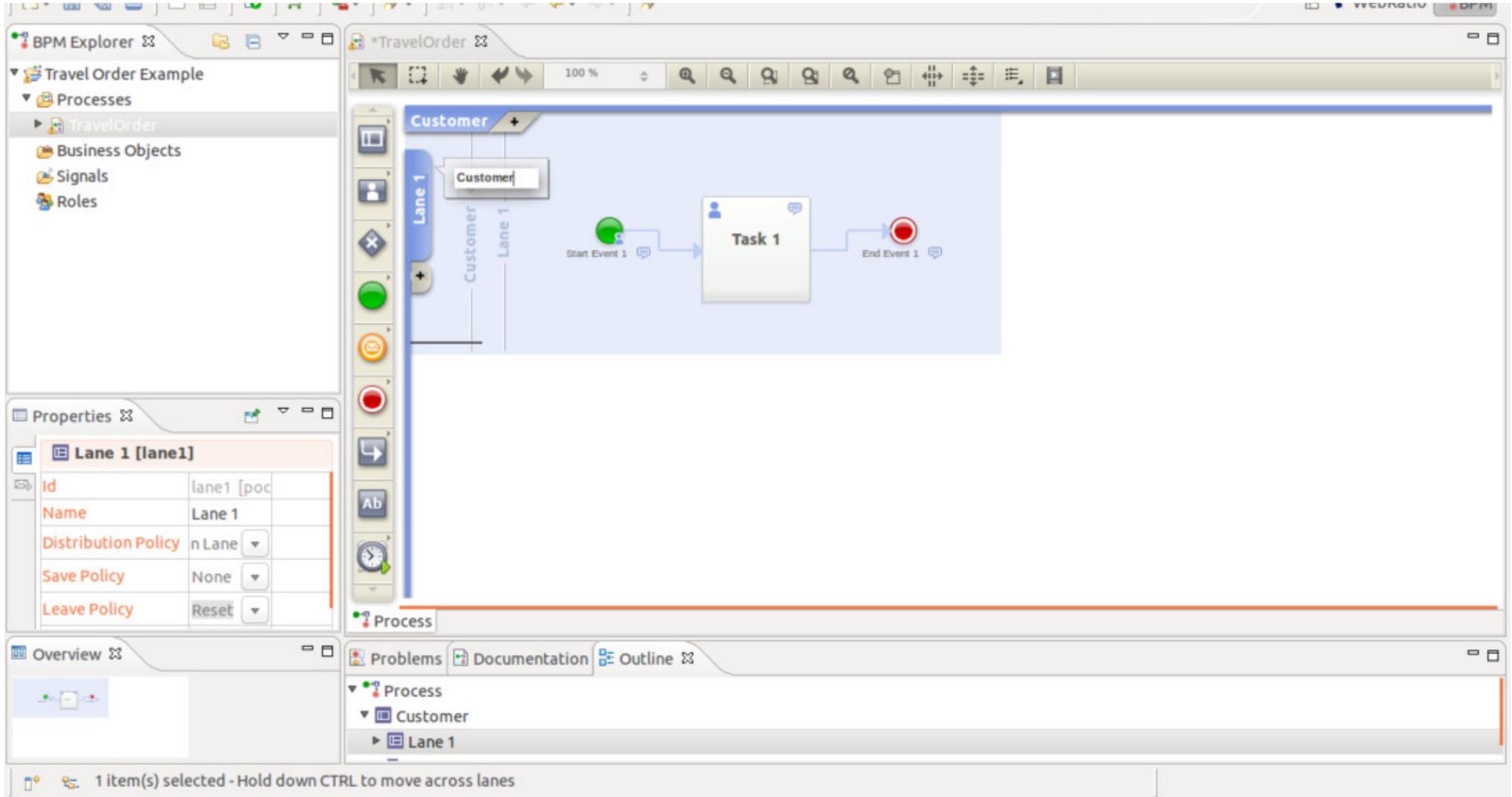
The "Overview" panel at the bottom left shows a small thumbnail of the process diagram. The "Outline" panel at the bottom right shows the hierarchical structure of the process:

- Process
  - Pool 1
    - Lane 1

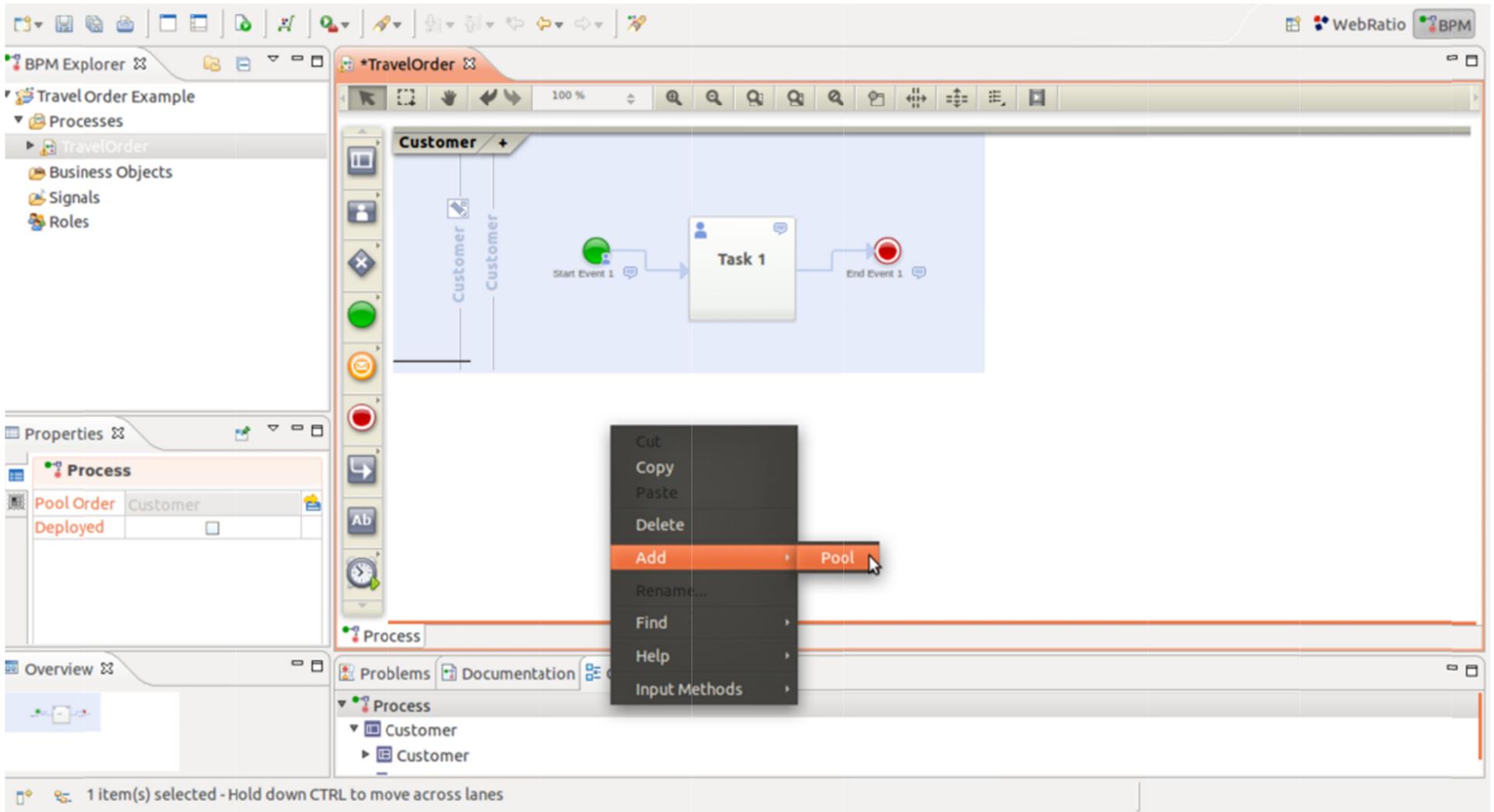
The status bar at the bottom indicates "1 item(s) selected - Hold down CTRL to move across lanes".

4. The Pool is already created with a Lane within. It's necessary to change the name to the first Lane and add all the other Lanes of the process. To change the Lane name:

1. double-click on the Lane tab "Lane 1" at the left of the edit area
2. enter "Customer" as Lane name



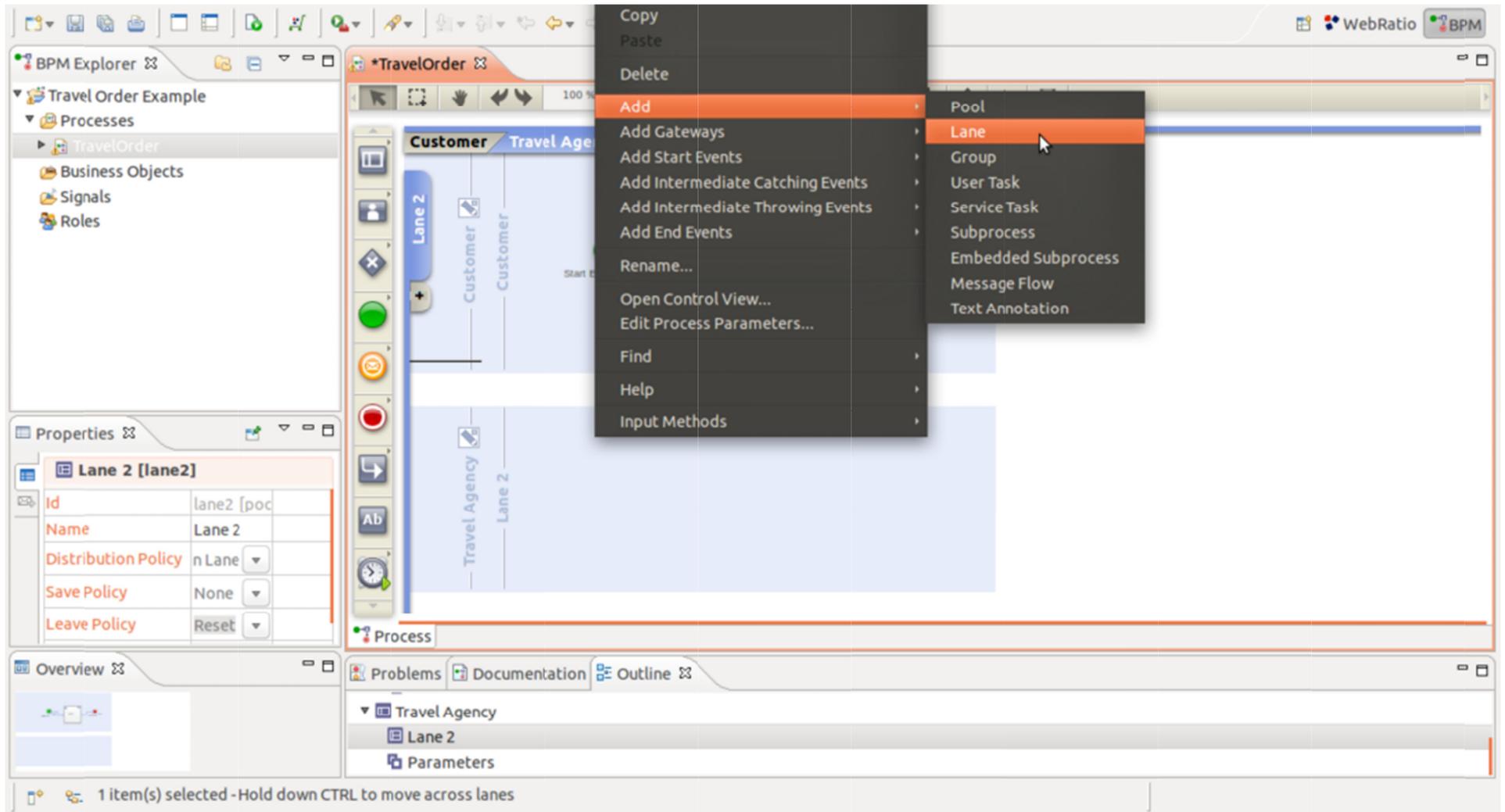
5. To add the other Pools:
  1. right click within the Pool and select **Add Pool**
  2. enter the name of the Pool



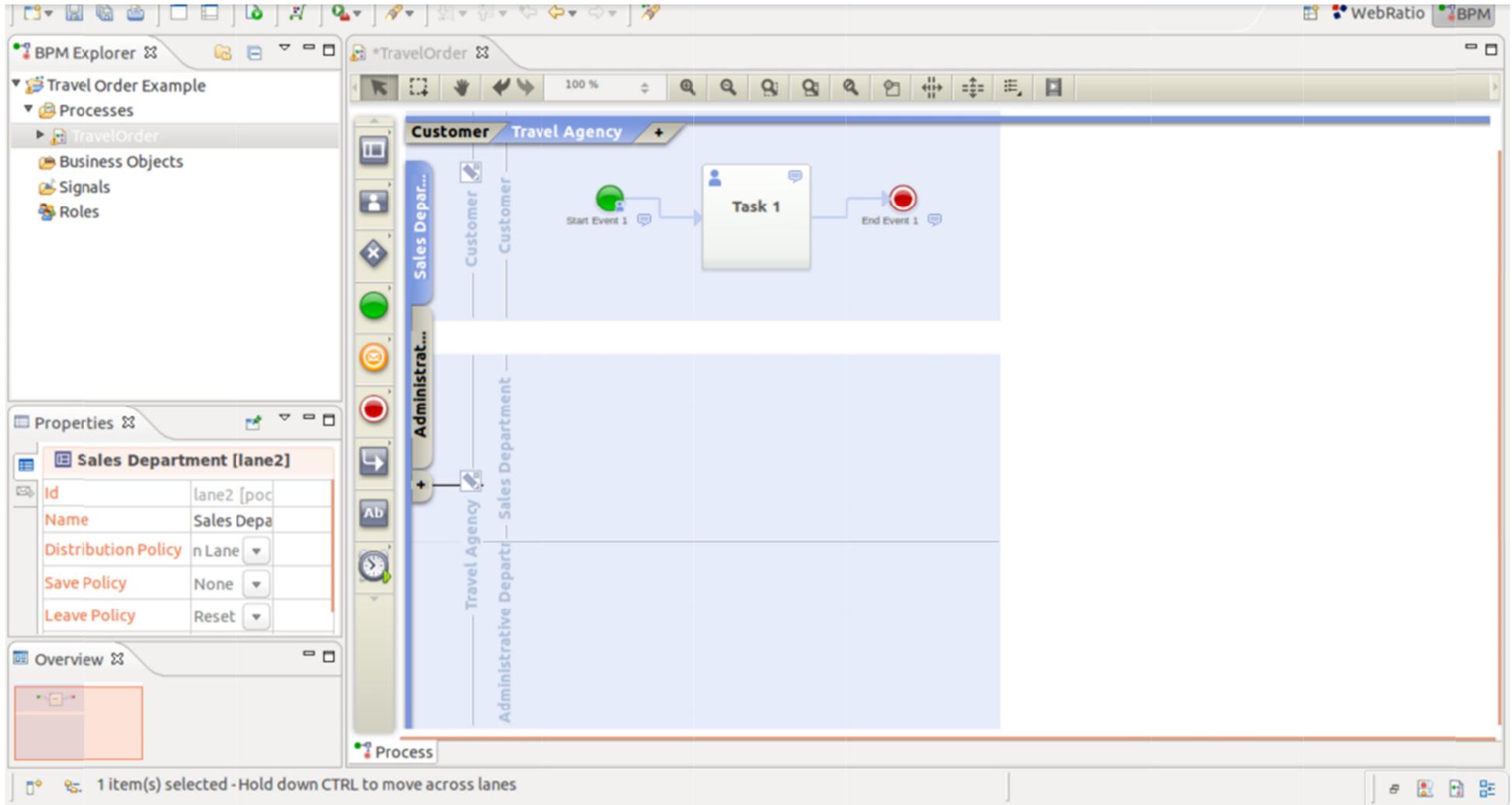
according to our process we have to create the "Travel Agency" Pool.

To add the other Lanes:

1. right click within the Pool in which you want to add and lane and select **Add Lane**
2. enter the name of the Lane



according to our process we have to create the "Sales Department" and the "Administrative Department" lanes.



6. Now it's possible to define the single steps of the process in the Lanes, assigning each task to the right actor. Within the first Pool a simple process has been already created. Since the process is started by the Customer we can leave the Start Event in the Customer Lane and change the name of the first Task:

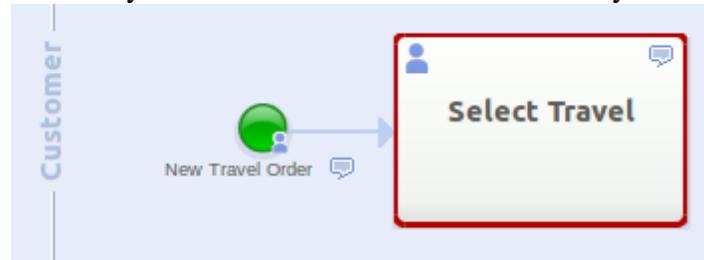
1. double-click on the Task element
2. enter "Select Travel" as Task name

Since the Start Event represents the first item activated by the Customer to start the Process, it's necessary to change it's name:

1. double-click on the Start Event element

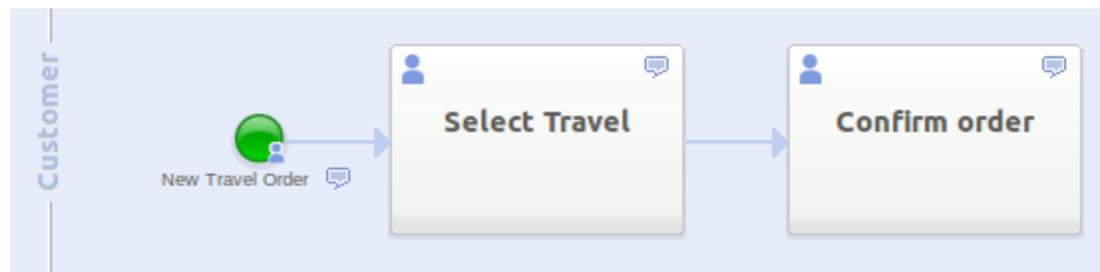
2. enter "New Travel Order" as Task name

Finally, since the process doesn't ends here, it's necessary to delete the End Event automatically created.



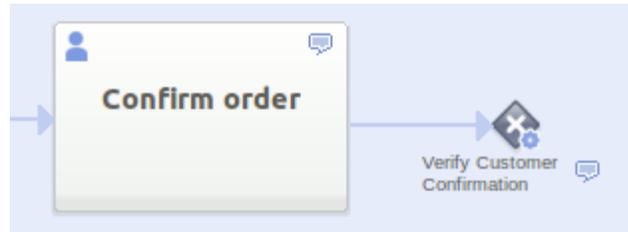
7. After having selected his travel, the Customer must verify his order and decide whether he confirms or cancels it. Let's add a "Confirm Order" Task:

1. click on the "Select Travel" Task
2. in the Pie Menu on the Task, click on the User Task Icon
3. drag the new User Task in the Customer Lane
4. enter "Confirm Order" as Gateway name



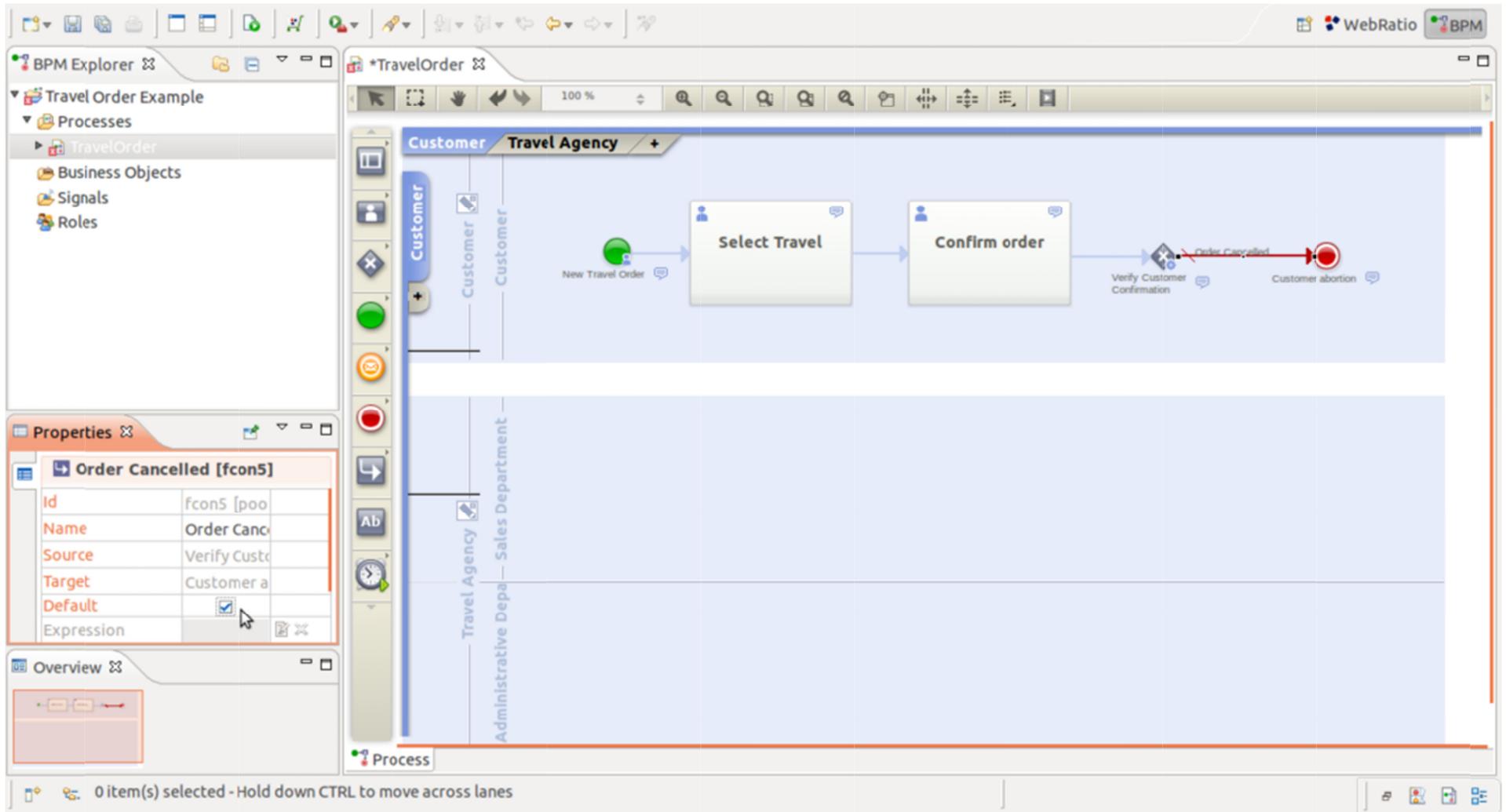
8. Basing on the responses of the customer, we will define a different path to be followed whether the travel order is confirmed or not, therefore we will use a Gateway element. To add a Gateway connected to the "Confirm Order" Task:

1. click on the "Confirm Order" Task
2. in the Pie Menu on the Task, click on the Exclusive Gateway icon
3. drag the new Gateway in the Supervisor Lane
4. enter "Verify Customer Confirmation" as Gateway name
5. in the Properties panel, in the Execution Property, select "Service" (since this element must be executed by the application)



9. Once the Gateway has been placed, it's necessary to place the Flow Connectors representing the paths selected basing on the condition to be evaluated by the Gateway. Since this Gateway will evaluate the result of the execution of the "Confirm Order" Task, it's necessary to add two Flow Connectors: one in case the customer cancels his order and one in case he confirms it. The former will lead to the end of the process, the latter will activate the "Provide Customer Data" Task. Let's add the Flow Connector for the case in which the customer cancels his order, we will simultaneously create the End Event:

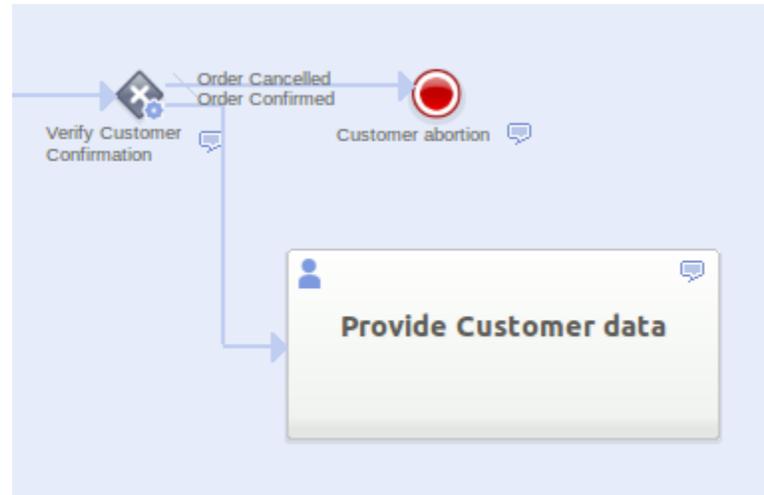
1. click on the "Verify Customer Confirmation" Gateway element
2. in the Pie Menu on the Gateway, click on the End Event icon
3. drag the new End Event in the Customer Lane
4. enter "Customer Abortion" as End Event name
5. double-click on the newly created Flow Connector
6. enter "Order cancelled" as Flow Connector name
7. in the Flow Connector Properties Panel check the Default Property (stating that this is the Connector followed by default)



Let's add the Flow Connector for the case in which the travel order is confirmed:

1. click on the "Verify Customer Confirmation" Gateway element
2. in the Pie Menu on the Gateway, click on the User Task Icon
3. drag the new User Task in the Customer Lane
4. double-click on the newly created User Task
5. enter "Provide Customer Data" as User Task name
6. double-click on the newly created Flow Connector

7. enter "Order confirmed" as Flow Connector name

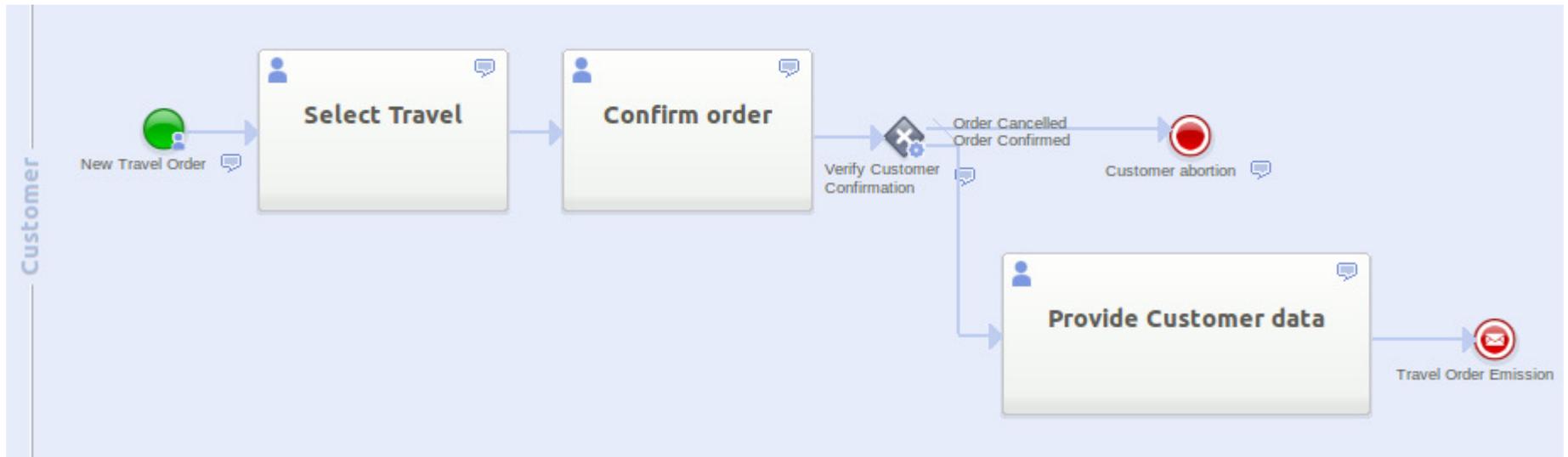


10. After the execution of the "Provide Customer Data" Task the customer's process ends sending a message. It's necessary to add an End Message Event that states the end of the process and the sending of the message:

1. click on the "End Events" icon in the Menu
2. select a End Message Event
3. drag the new End Message Event in the Customer Lane
4. enter "Travel Order Emission" as End Message Event name

It's then necessary to link the "Provide Customer Data" Task to the newly created End Message Event:

1. click on the "Provide Customer Data" Task
2. in the Pie Menu on the Task, click on the Flow Connector icon
3. drag the new Flow Connector to the "Travel Order Emission" End Message Event

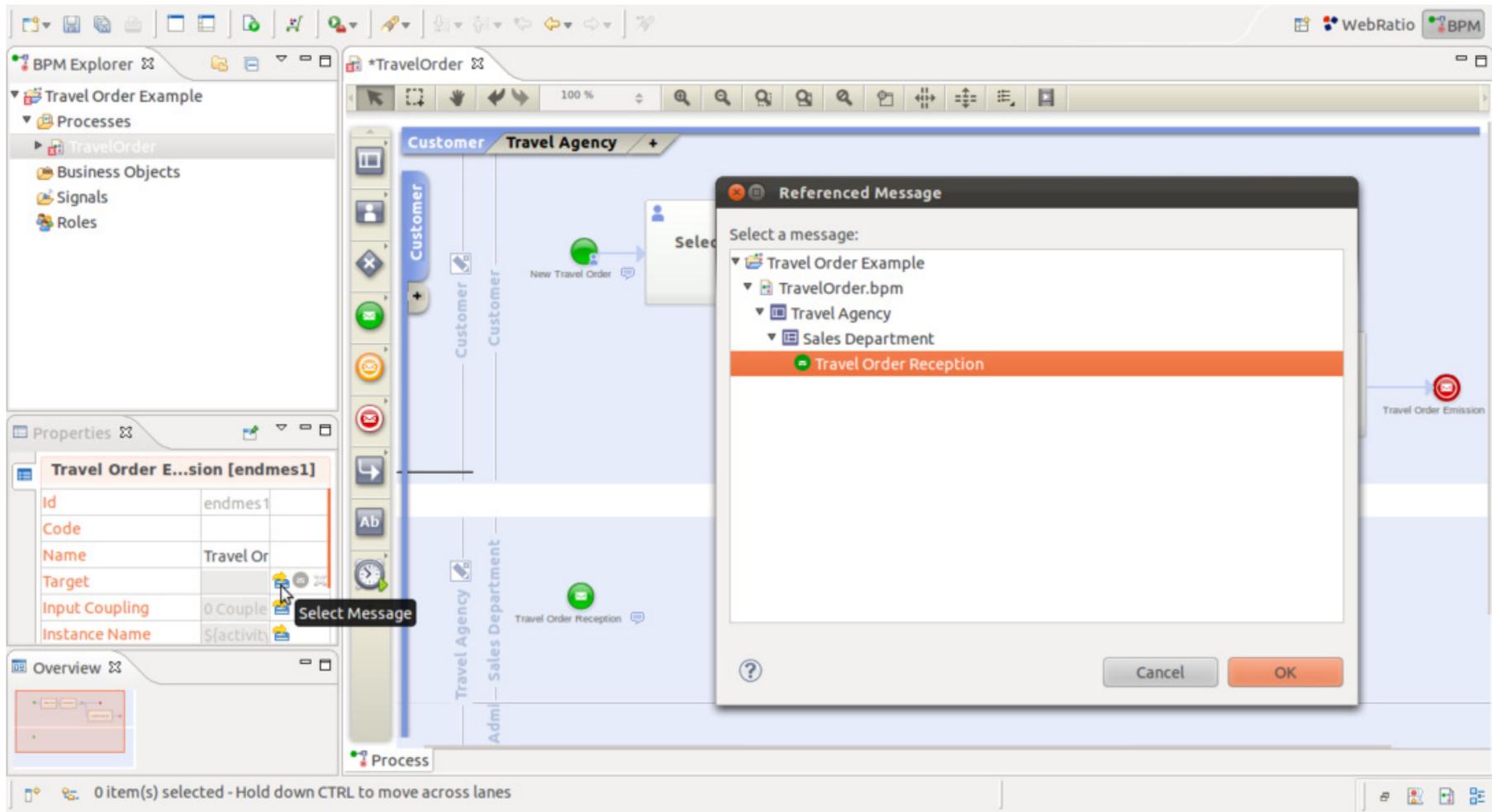


11. It is now necessary to complete the Travel Agency Pool. Let's add a New Start Message Event that will be activated by the activation of the End Message Event we've just created:

1. click on the "Starts Events" icon in the Menu
2. select a Start Message Event
3. drag the new Start Message Event in the Sales Department Lane
4. enter "Travel Order Reception" as Start Message Event name

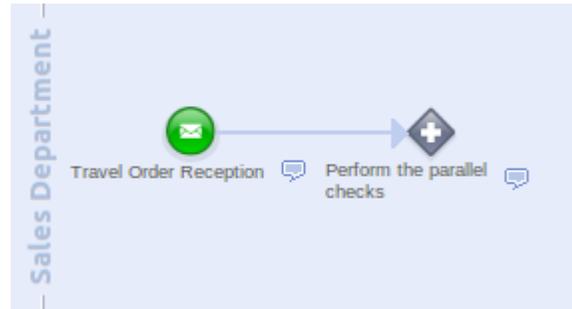
Since this event must be activated by the End Message Event previously created, it's necessary to link them.

1. click on the "Travel Order Emission" Start Message Event
2. in the properties panel click on the target selection button
3. select "Travel Order Reception"



12. Once the Travel Order has been received, a Sales Dep. operator must check the availability of the travel. Meanwhile an Administrative Dep. operator must check the solvency of the customer. Therefore we will use a Parallel Gateway element.

1. click on the "Gateways" icon in the Menu
2. select a Parallel Gateway element
3. drag the Parallel Gateway element in the Sales Dep. Lane
4. enter "Perform the parallel checks" as Gateway name
5. to link the Start Event to the Gateway, click on the "Travel Order Reception" Task
6. in the Pie Menu on the Task, click on the Flow Connector icon
7. drag the new Flow Connector to the newly created Gateway

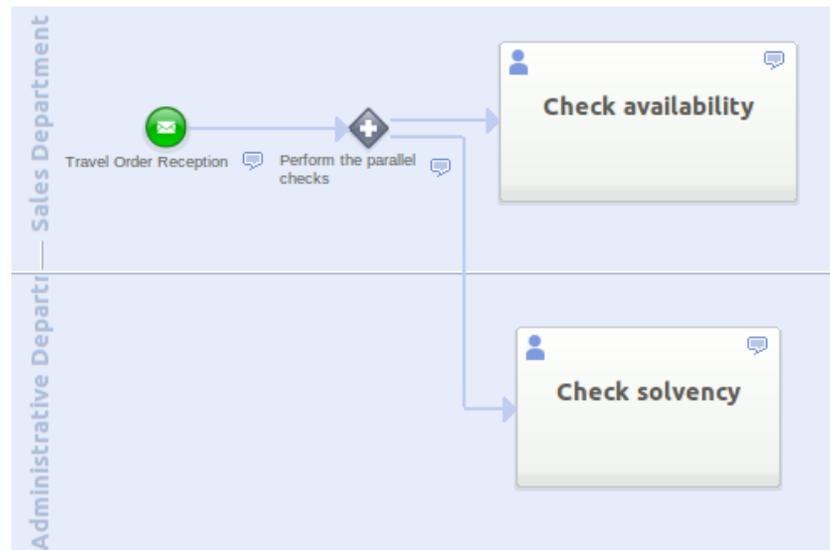


13. Once the Gateway has been placed, it's possible to add the next task.

1. click on the "Perform the parallel checks" Gateway
2. in the Pie Menu on the Gateway, click on the User Task Icon
3. drag the new User Task in the Sales Dep. Lane
4. enter "Check availability" as User Task name

Let's add the parallel task:

1. click on the "Do the parallel checks" Gateway
2. in the Pie Menu on the Gateway, click on the User Task Icon
3. drag the new User Task in the Administrative Dep. Lane
4. enter "Check solvency" as User Task name

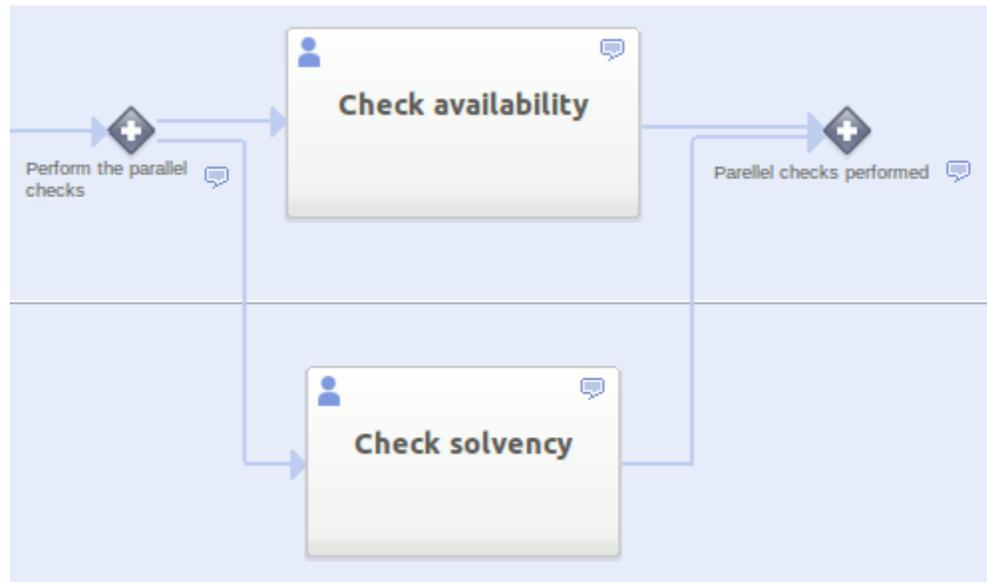


14. Once the parallel tasks are achieved, the process can continue normally. Therefore it's necessary to add an other Parallel Gateway element:

1. click on the "Gateways" icon in the Menu
2. select a Parallel Gateway element
3. drag the Parallel Gateway element in the Sales Dep. Lane
4. enter "Parallel checks performed" as Gateway name

It's then necessary to add the destination of the Flow Connectors.

1. click on the "Check availability" Task
2. in the Pie Menu on the Task, click on the Flow Connector Icon
3. drag the new Flow Connector to the "Parallel checks performed" Gateway
4. in the same way, click on the "Check solvency" Task
5. in the Pie Menu on the Task, click on the Flow Connector Icon
6. drag the new Flow Connector to the "Parallel checks performed" Gateway



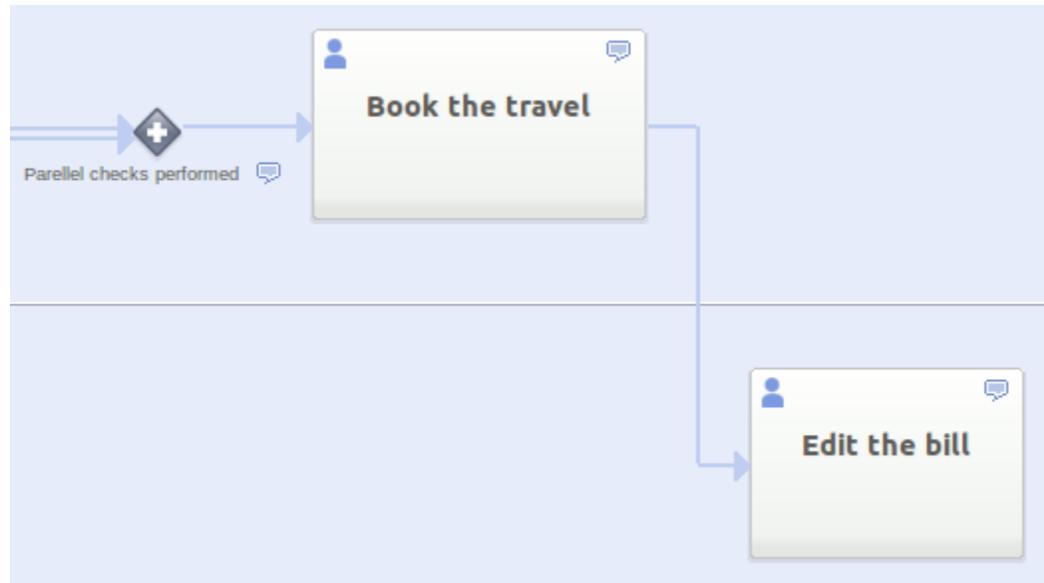
15. To complete the process, two other User Tasks must be added. Firstly the Sales Dep. operator must book the travel.

1. click on the "Parallel checks performed" Gateway
2. in the Pie Menu on the Gateway, click on the User Task Icon
3. drag the new User Task in the Sales Dep. Lane
4. enter "Book the travel" as User Task name

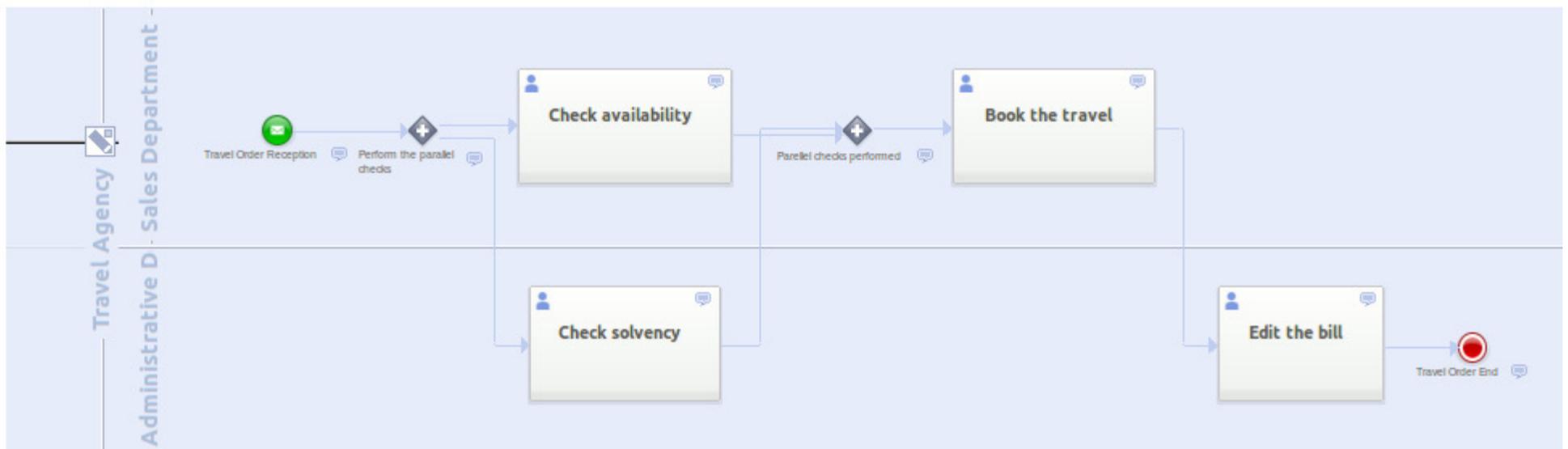
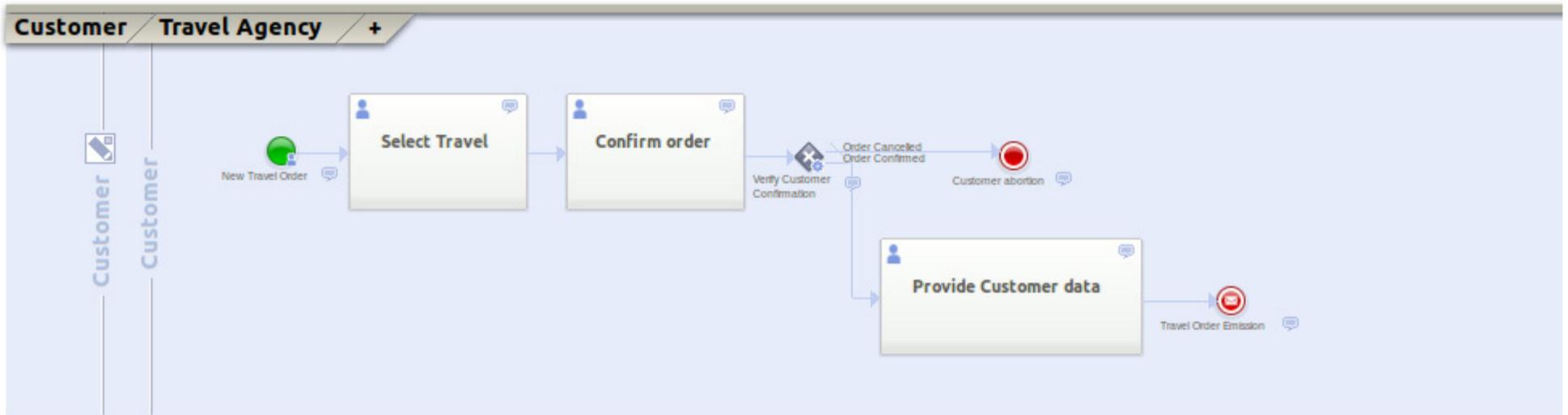
Next the Administrative Dep. operator can edit the bill.

1. click on the "Book the travel" Task

2. in the Pie Menu on the Task, click on the User Task Icon
3. drag the new User Task in the Administrative Dep. Lane
4. enter "Edit the bill"as User Task name



16. After the execution of the "Edit the bill" Task the process ends. It's necessary to add an End Event.
  1. click on the "Edit the bill" Task
  2. in the Pie Menu on the Task, click on the End Event Icon
  3. drag the new End Event in the Administrative Dep. Lane
  4. enter "Travel Order End"as End Event name

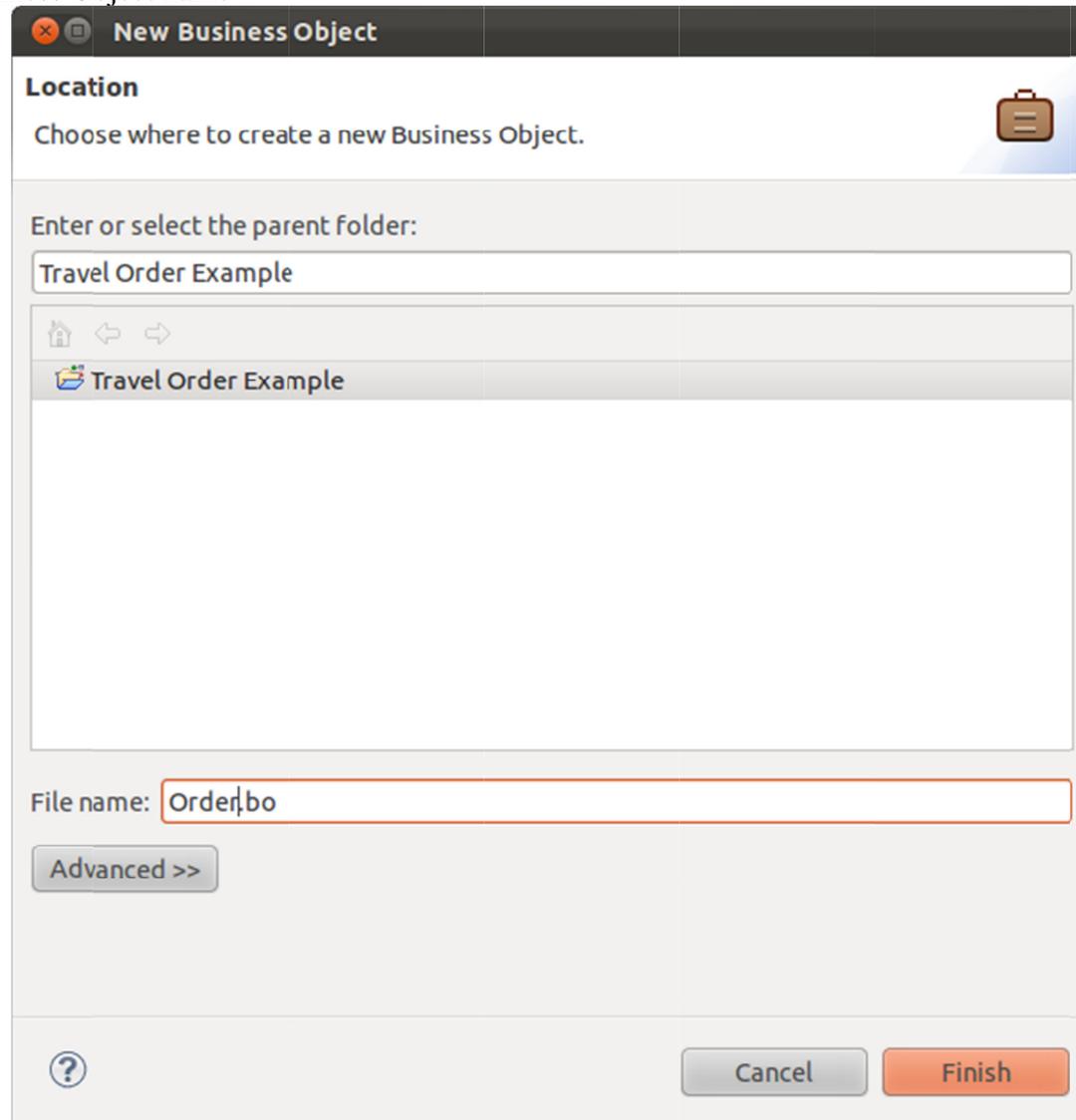


## Step 2: Process Data

Once the steps of the process have been entirely defined we can focus on the definition of the parameters of the process. Here we will define the internal structure of every parameter, if it's a simple parameter or a complex one (in this case we will create a **Business Object**). In this phase we will also define which process parameters are managed by every single Element in the process (Task, Event, Gateway). The first process parameter to

define is the order parameter. The order is composed by multiple properties such as the destination, the travel reference, the start date and the end date. Since the order is a complex parameter we must define a Business Object:

1. in the BPM Explorer view, right-click on the **Business Objects** project element
2. select **New -> Business Object**
3. enter "Order.bo" as Business Object name



In the "Order" Business Object window, we will insert all the properties that define a customer order:

- **Destination:** contains the destination of the travel
- **Travel reference:** contains the catalogue reference of the travel
- **Price:** contains the price of the travel
- **Start date:** contains the start date of the travel
- **End date:** contains the end date of the travel
- **Comments:** contains notes added by the Customer

Let's add all the properties to the Order Business Object. In the Order Business Object window, for every property:

1. click on the "Add" button
2. in the "Property Name" field enter the name of the property
3. in the "type" field select the type of the property

as an example:

1. click on the "Add" button
2. in the "Property Name" field enter "Start date"
3. in the "type" field select "date"

Order

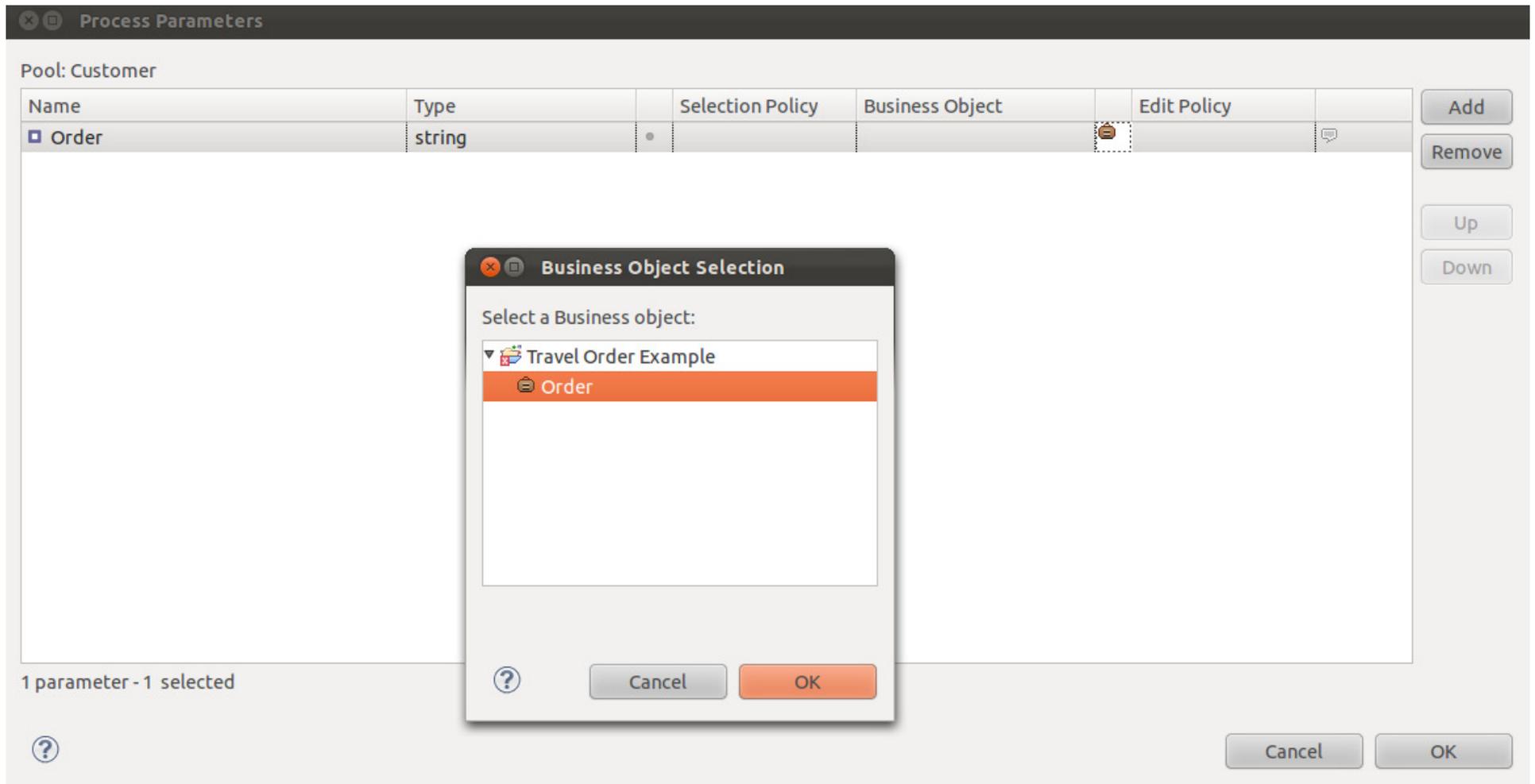
### Business Object

Property Name	Type		Selection Policy		
Destination	string	•			
Travel reference	string	•			
Price	decimal	•			
Start date	date	•			
End date	date	•			
Comments	text	•			

General

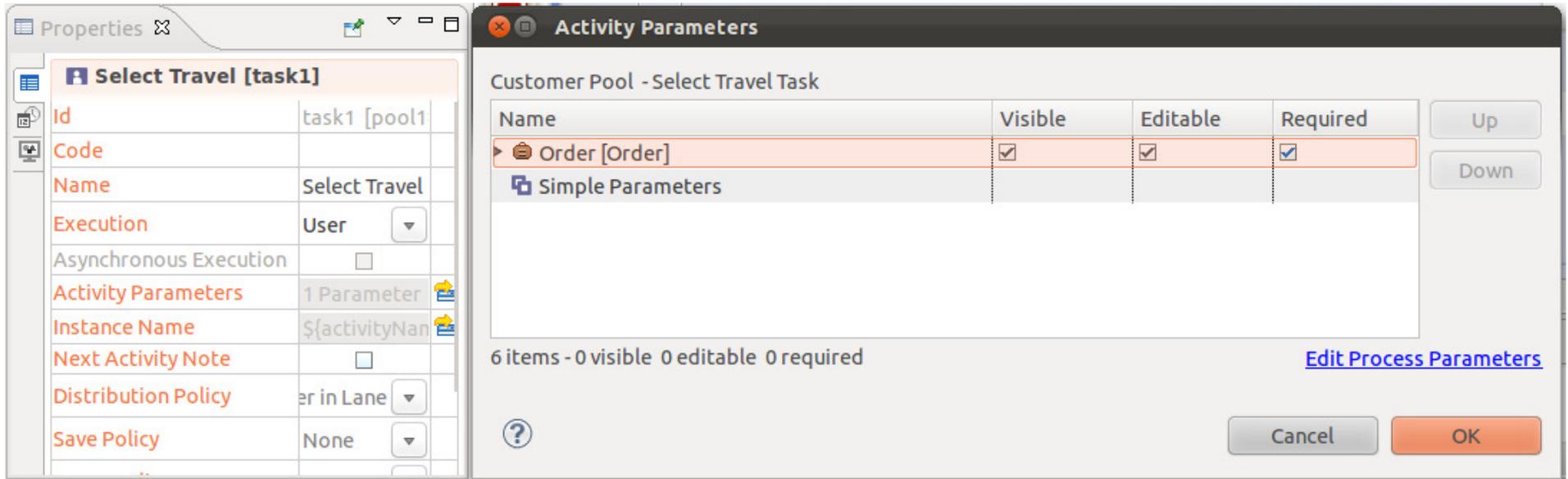
Once the Order Business Object has been defined, it's possible to use it as process parameter:

1. click on the Edit Process Parameters icon next to the Pool name
2. in the Edit Process Parameters window click on the "Add" button
3. enter Order as parameter name
4. click on the Business Object icon
5. select the Order Business Object



Now it's possible to state that during the "Select travel" Task, the Customer must edit the Order parameter:

1. click on the "Select travel" Task
2. in the properties panel select the Order parameter
3. check the properties **Visible**, **Editable**, **Required**



In the "Confirm Order" task, the Customer will decide whether to confirm or to cancel the travel ordered. In the Task, the Order will be Visible. It's necessary to add a new parameter, to represent the decision of the Customer:

1. right-click on the pool
2. select Edit Process Parameter
3. in the Edit Process Parameter windows click the Add button
4. insert Confirmation as parameter name
5. insert string as parameter type

This parameter is particular since we want the Supervisor to choose only among these two values: "Confirmed" or "Cancelled". In order to define statically the available parameter values:

1. click on the gray dot next to the type field
2. in the Case Values Editing window click the Add button
3. insert "Confirmed" as value
4. again, click the Add button
5. insert "Cancelled" as value

Process Parameters

Pool: Customer

Name	Type	Selection Policy	Business Object	Edit Policy
Order			Travel Order Example/Ord	single
Confirmation	string			

2 parameters - 1 selected

Case Values

Edit the items:

Confirmed

Add...

Rename...

New Value

Define a new value:

Cancelled

Cancel OK

Cancel OK

Once the new parameters have been set, it's possible to define in the "Confirm Order" Task the Order parameter as Visible and the Confirmation parameter as Required.

Activity Parameters

Customer Pool - Confirm order Task

Name	Visible	Editable	Required
▶ Order [Order]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▼ Simple Parameters			
▣ Confirmation [string]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

7 items - 0 visible 0 editable 1 required

[Edit Process Parameters](#)

Cancel OK

Up Down

?

If the Customer confirms his order, he must provide personal data before the emission of his travel order. Therefore we need another Business Object with the following properties:

- **Name:** contains the name of the Customer
  - **Surname:** contains the surname of the Customer
  - **Sex:** contains the sex of the Customer (M or F)
  - **Birth date:** contains the birth date of the Customer
  - **Credit Card Number:** contains the Credit Card Number of the Customer
  - **Credit Card End of validity:** contains the end date of the Credit Card validity
  - **Credit Card Validation number:** contains the Credit Card validation Number
1. again, in the BPM Explorer view, right-click on the **Business Objects** project element
  2. select **New -> Business Object**
  3. enter "Customer.bo" as Business Object name
  4. repeat the previous steps to complete this new Business Object and to create the corresponding process parameter

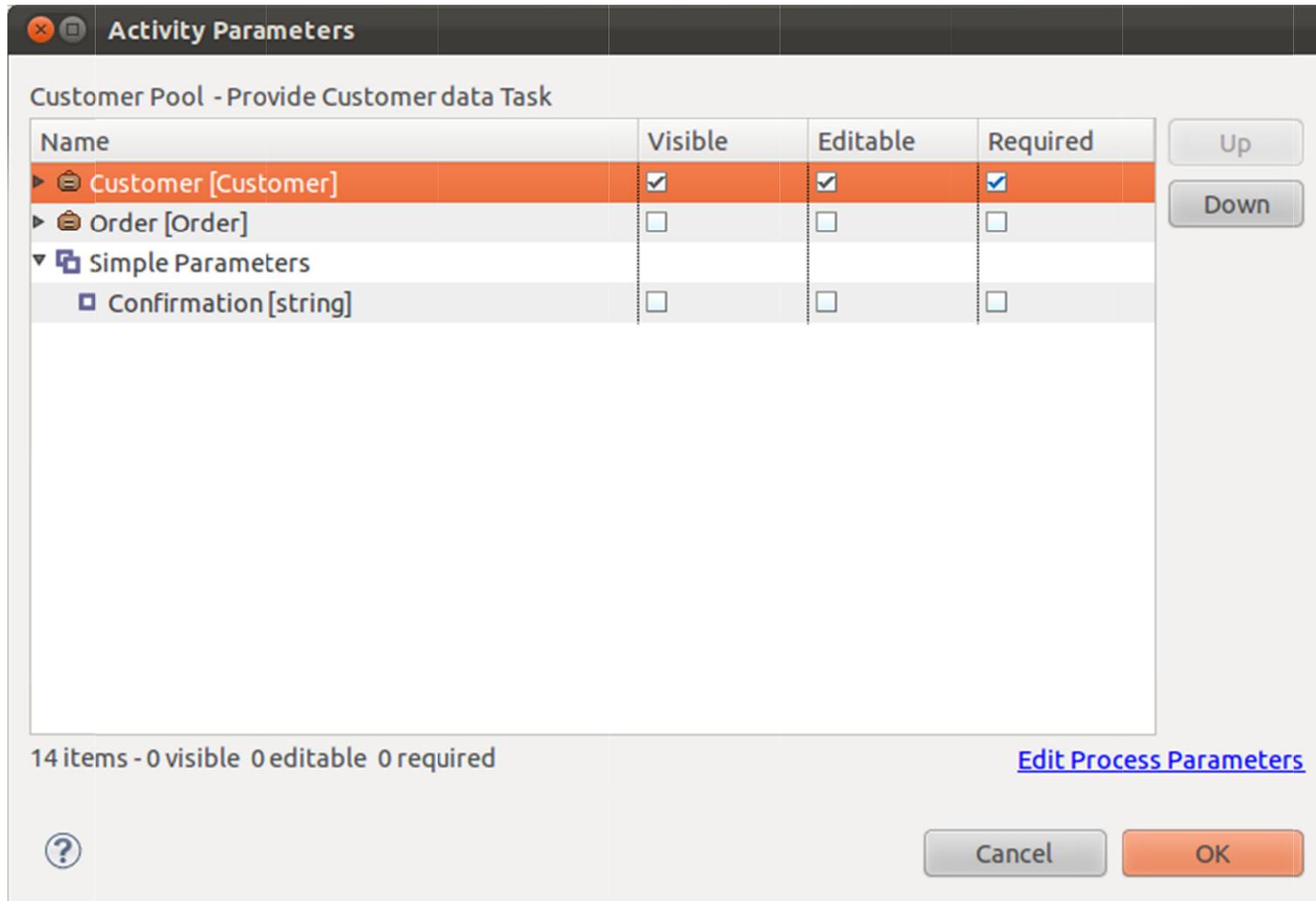
Customer

### Business Object

Property Name	Type		Selection Policy		
Name	string	•			
Surname	string	•			
Sex	string	•	single		
Birth date	date	•			
Credit Card Number	integer	•			
Credit Card End of Validity	string	•			
Credit Card Validation Number	integer	•			

General

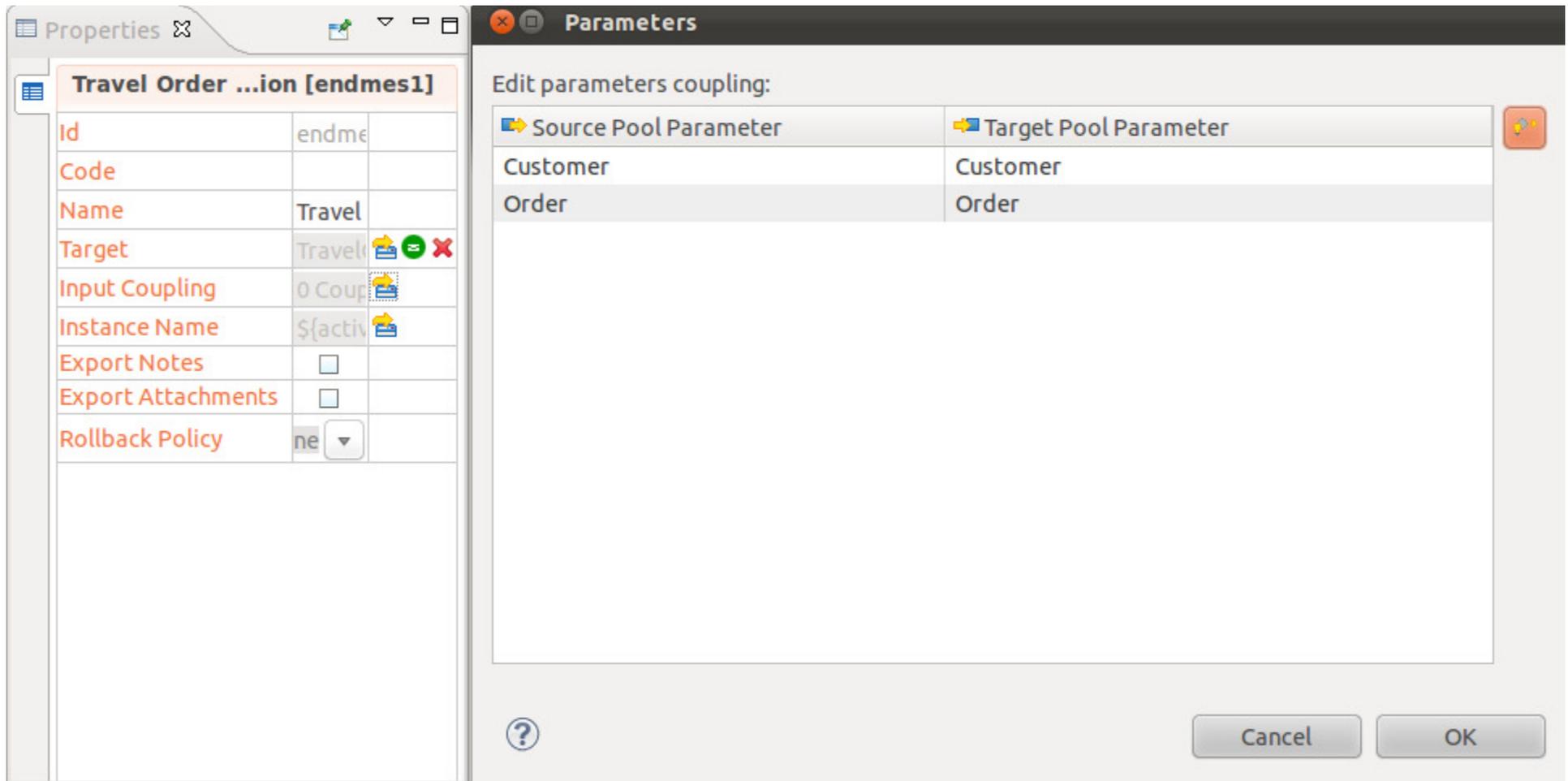
Once the new parameter has been set, it's possible to define in the "Provide customer data" Task the Customer parameter as Visible, Editable and Required.



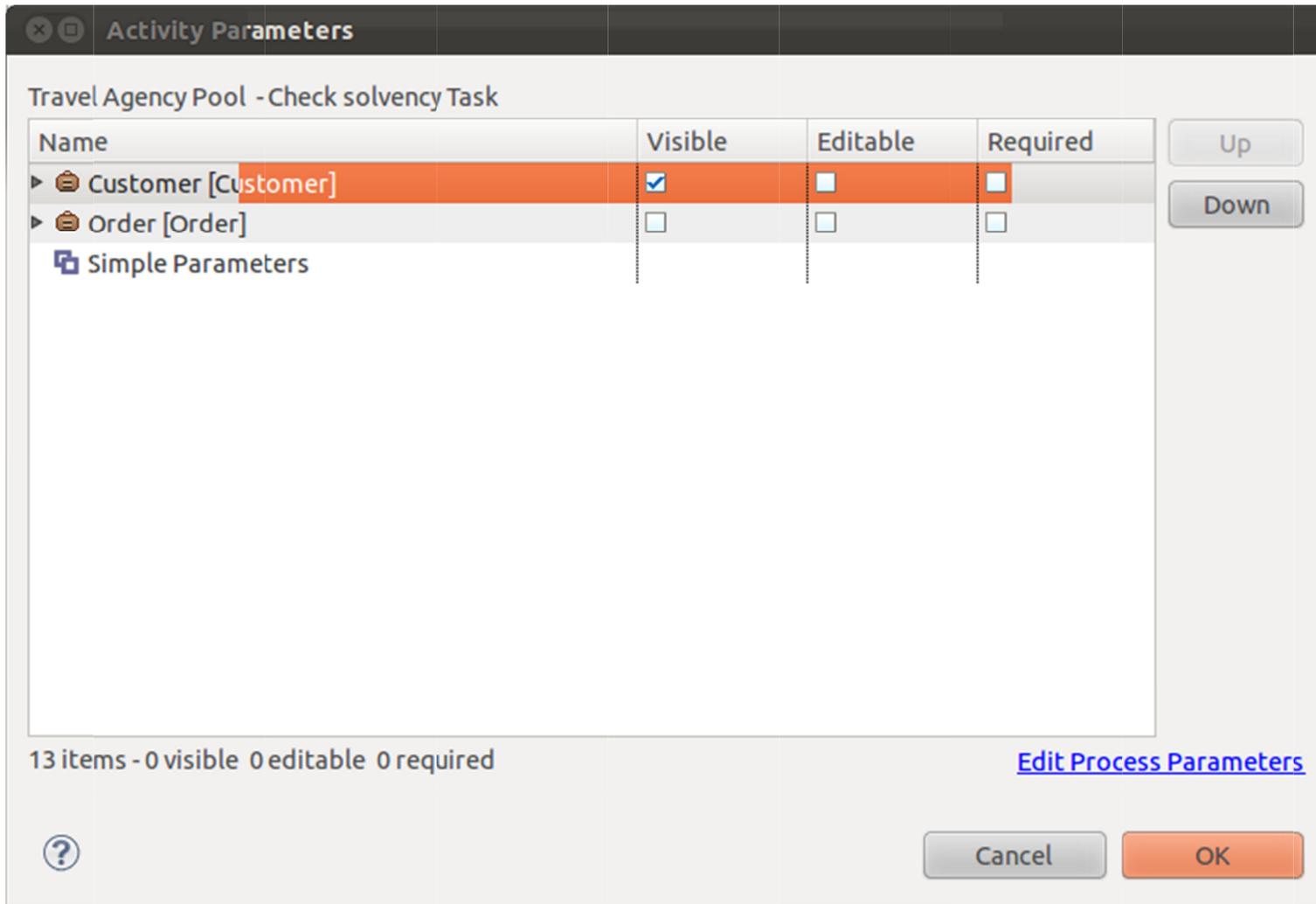
Since the process parameters are specific to each pool, we need to create the same "Order" and "Customer" parameters in the pool and to couple them with the corresponding ones in the "Customer" pool:

1. right-click on the "Travel Agency" pool
2. select Edit Process Parameter
3. in the Edit Process Parameter windows click the Add button
4. insert Order as parameter name
5. again, click the Add button

6. insert Customer as parameter name
7. click on the "Travel Order Emission" End Event
8. in the properties panel click on the Input Coupling button
9. use the Guess Coupling button to complete the table



The "Check availability" Task will simply take the order and verify the availability of the travel. To accomplish this the task will only have the Order parameter as Visible. In the same way, the "Check solvency" task will only have the Customer parameter as Visible.



The "Book the travel" and "Edit the bill" Tasks will need particular sets of information. It requires to select the appropriate parameters within each Business Object parameter.

Activity Parameters

Travel Agency Pool - Edit the bill Task

Name	Visible	Editable	Required
Customer [Customer]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name [string]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surname [string]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sex [string]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Birth date [date]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credit Card Number [integer]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credit Card End of Validity [string]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credit Card Validation Number [integer]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Order [Order]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destination [string]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Travel reference [string]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Price [decimal]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Start date [date]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
End date [date]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments [text]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Simple Parameters			

Up  
Down

13 items - 8 visible 0 editable 0 required

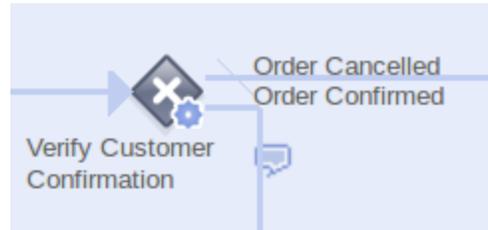
[Edit Process Parameters](#)

Cancel OK

### Step 3: Business Rule

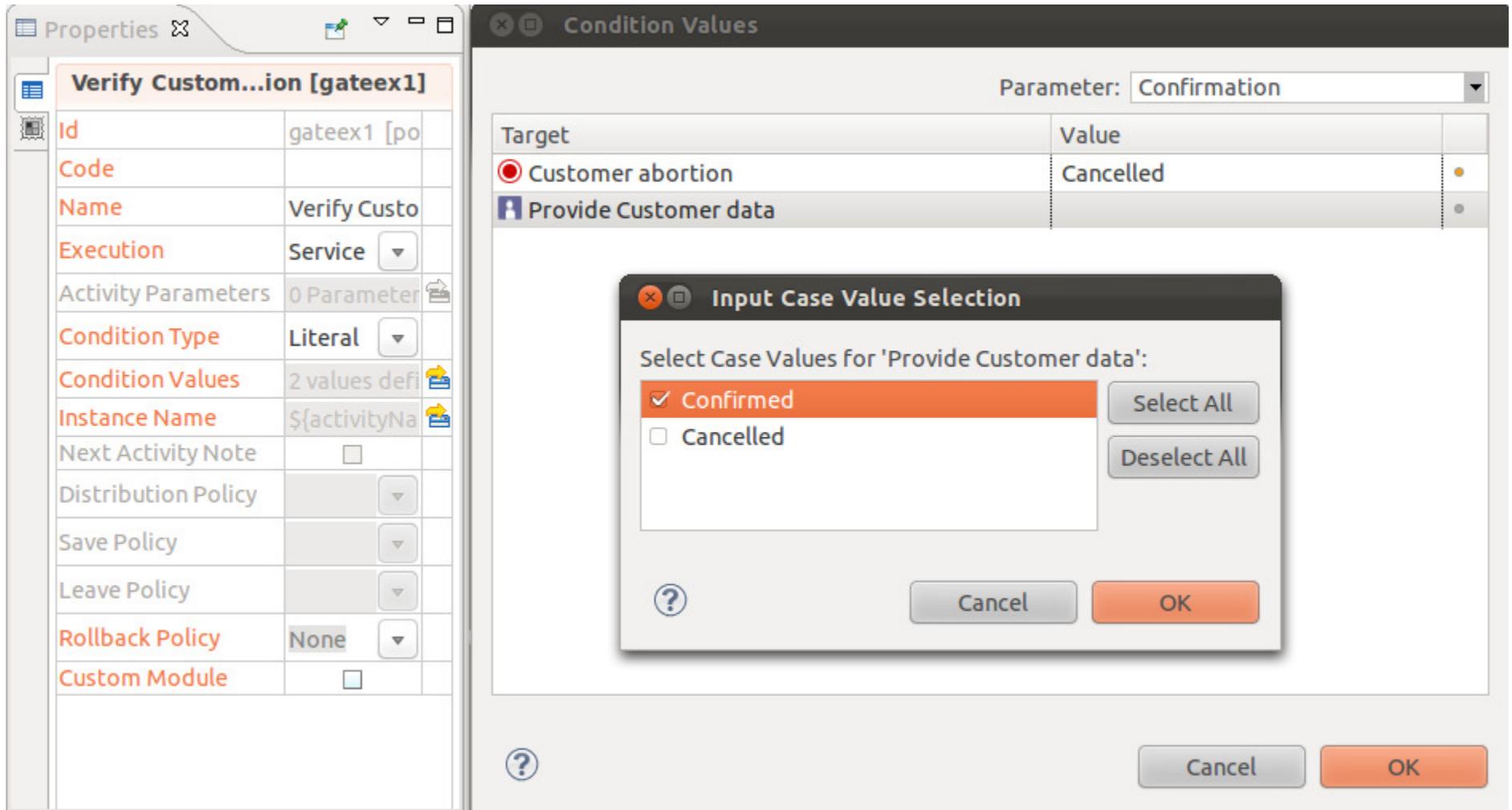
Once all the process parameters has been defined, it's possible to define the Business Rules. In this step we will define the behaviour of the process' Gateways defining the conditions for the proceeding of the process.

The "Verify Customer Confirmation" Gateway will automatically evaluate the result of the "Confirm Order" User Task execution. If the travel order is confirmed it will activate the "Provide customer data" Task, else it will return to the "Customer abortion" End Event.



Let's configure this Gateway:

1. click on the "Verify Customer Validation" Gateway
2. in the Properties Panel, in the Condition Type Property, choose Literal (since we want the Gateway to evaluate the value contained in the Confirmation Process Parameter)
3. in the Properties Panel, in the Condition Value Property, click the Browse button
4. select the Confirmation Process Parameter in the Parameter field
5. select the Confirmed case value for the Flow Connector that leads to the "Provide customer data" Task
6. select the Cancelled case value for the Flow Connector that leads to the "Customer abortion" End Event



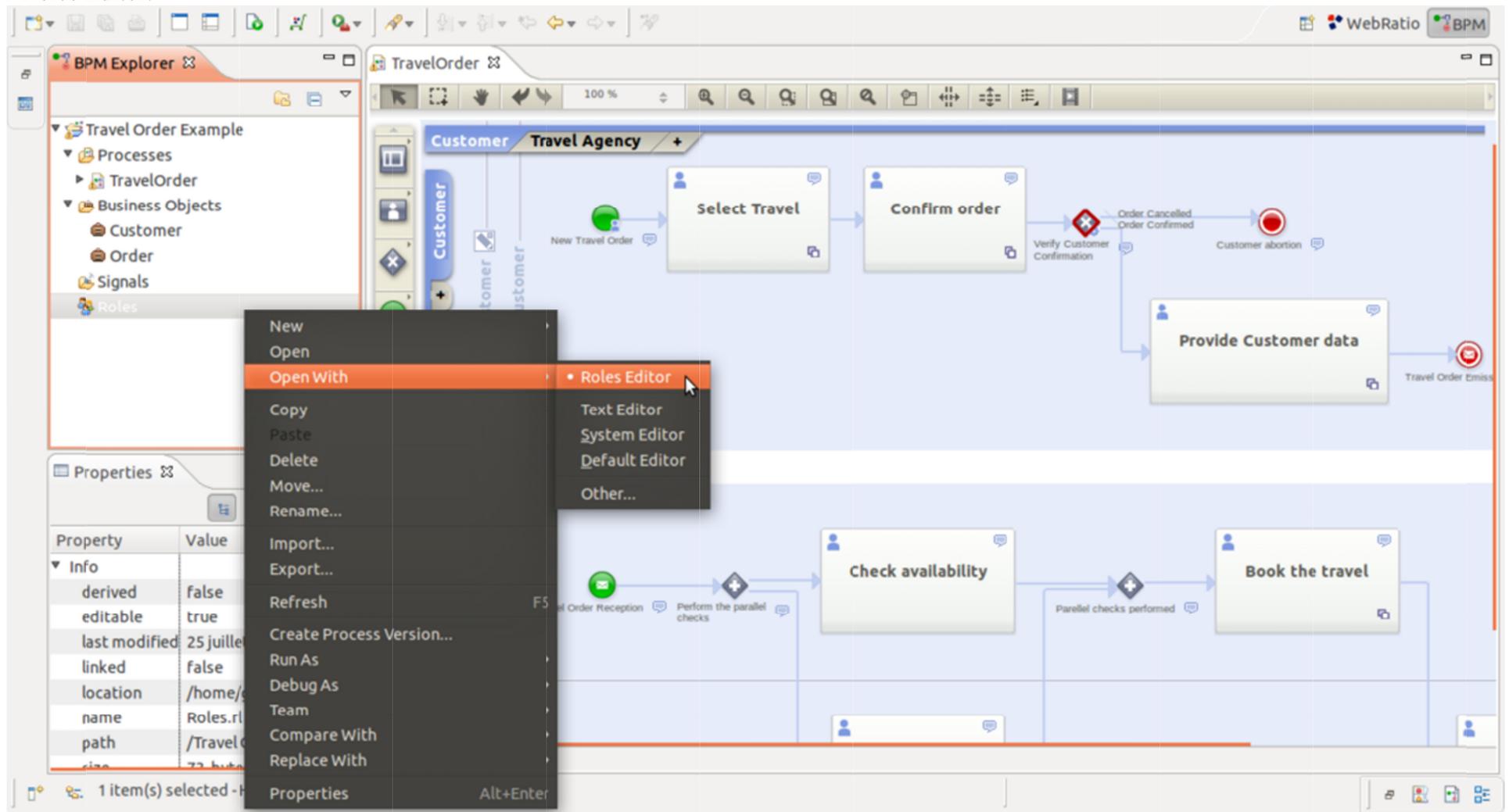
## Step 4: Business Process Users

By defining the Process Lanes we are defining all the actor categories of a process. With the Roles we are defining the Group of users that will use the Process. A Role might correspond to several Lanes in the same Process or in different Processes (e.g.: a user belonging to the Sales Dep. Role might act as Sales Dep. Operator in a Travel Order Process instance, but he might start a Travel Order Process himself, or he might act as Customer in a Travel Order Process Instance). The Roles are defined within a BPM Project (since the Roles are shared in all the Process Models contained in the BPM Project). In this project we are creating three Roles: Customer, Sales Dep. Operator and Administrative Dep. Operator:

- **Customer:** is related to the Customer Lane in the Travel Order Process Model
- **Sales Dep. Operator:** is related to the Customer Lane and Sales Dep. Lane (since a Sales Dep. Operator might ask for a travel order himself)

- **Administrative Dep. Operator:** is related to the Administrative Dep. Lane in the Travel Order Process Model (we assume that an Administrative Dep. Operator will use a different Process for his Travel Orders)

To add the user Roles to the Project, in the BPM Explorer window double click on the "Roles" node, or right-click on this node, than on Open With --> Roles Editor.



Once the Roles configuration panel has been shown it's possible to create the Roles:

1. click on the "Add" button
2. insert the Role name

## Roles

Role Name	Participants				
Customer					Add Remove
Sales Dep. Operator					
Administrative Dep. Operator					

Now we can associate the newly created Roles to the Travel Order Process Model Lanes:

1. in the Process Model click on the Customer Lane
2. in the Properties panel, click on the Roles Property Select Roles button
3. choose the Customer and the Sales Dep. Operator Roles

The screenshot shows two windows. On the left is the 'Properties' panel for 'Customer [lane1]'. It has a table with the following data:

Id	lane1 [pool1#lane1]
Name	Customer
Distribution Policy	Start User in Lane
Save Policy	None
Leave Policy	Reset
Roles	Customer Sales Dep. Operator

On the right is the 'Roles Selection' dialog box. It has a title 'Roles Selection' and a subtitle 'Select roles for 'Customer':'. It contains a list of roles under the folder 'Travel Order Example':

- Administrative Dep. Operator
- Customer
- Sales Dep. Operator

The dialog also has 'Select All', 'Deselect All', 'Cancel', and 'OK' buttons.

It's possible to repeat these steps to associate the Sales Dep. Operator Role to the Sales Dep. Lane and the Administrative Dep. Operator Role to the Administrative Dep. Lane.

## Step 5: Publish the Process

Now we have completely defined the process. It's possible to validate the process model by activating the **Publish Process** functionality.



This functionality will automatically create a Java Web Application that supports the process modeled and permits to verify the model correctness browsing it.