



SupportPac LA71: IBM WebSphere Operational Decision Management Integration for WebSphere Process Server

Getting started with IBM Business Process Manager

Task 3 - Business Process Author re-uses an HTDS Managed Decision as part of a BPMN Process

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Overview

In this task, the Business Process Author uses the HTDS Managed Decision service as part of their process. This allows them to run a process using the rules in the managed decision rather than defining their own embedded rules. In this task you will use the Eligibility Managed Decision Service.

Readers who want to skip the exercise should import the solution as a Snapshot from **[SupportPac LA71 Path]\BPMTutorial\task3\Insurance_Sample_-_HTDS_Reuse - Completed.twx** and continue at Step 6 to test the HTDS service in the process.

Note: Additional HTDS services can be added to the Process Application, but if any Business Objects or Data types have duplicate names (irrespective of namespace), the business objects will have to be renamed and certain automated functions – e.g. mapping variables – will not work and will need to be undertaken manually. These constraints will be removed in a future release of BPM 7.5.

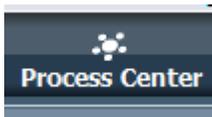
Step 1. Create a Process Application to host the HTDS Decision Service

This task starts by creating a new Process Application to host the HTDS Decision Service.

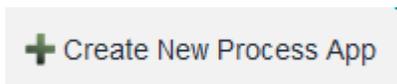
Open Process Designer and login.
For **User Name** type **tw_admin**
For **Password** type **tw_admin**.



Click the Process Center icon.



Click Create New Process App.



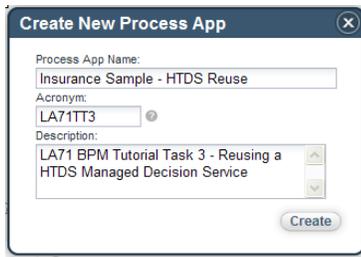
Fill in the Process App details as shown below.

For **Process App Name** type **Insurance Sample – HTDS Reuse**

For the **Acronym** type **LA71TT3**

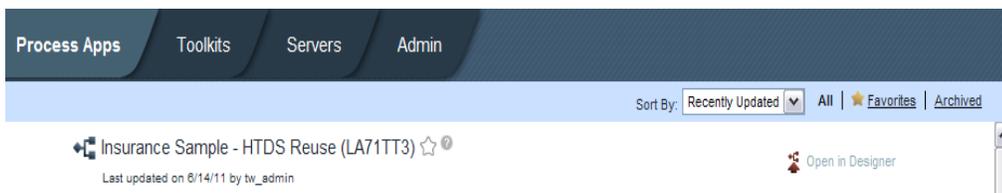
Note: If you have already imported the completed Task 3 you will have to either rename the imported Process App or give this one a different acronym.

For the **Description** provide details as shown below.



Click **Create**.

In the list of Process Apps, in the entry for **LA71TT3** click the **Open in Designer** link.



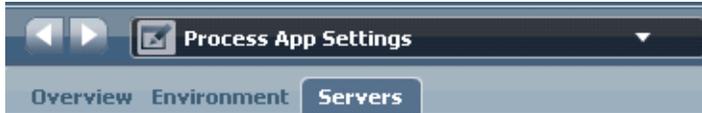
Process Designer opens on the newly created Process App.



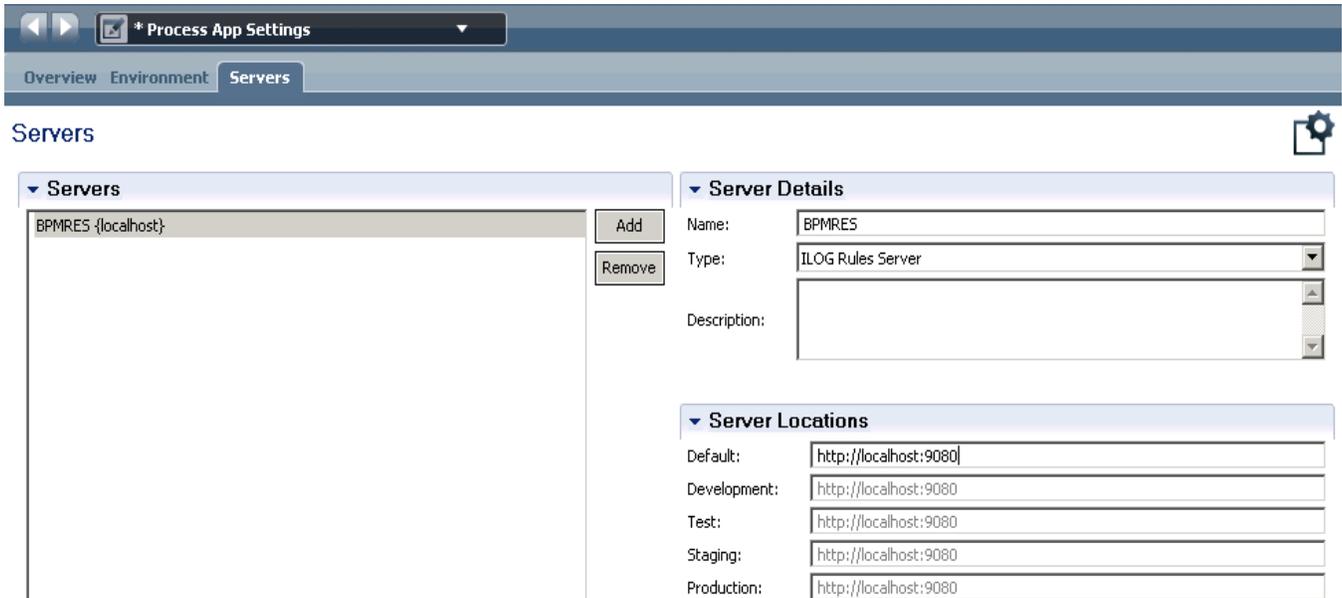
Step 2. Register the Rule Execution Server

In order to access the rule applications you must register the rule application server hosting your HTDS Managed Decisions.

Select **Process App Settings** Screen.



In the **Servers** Screen click the **Add** button
Set the **Name** to **BPMRES**.
Set the **Type** to **ILOG Rules Server** by selecting from the pulldown list.
Set the **Default** url to <http://localhost:9080> or the port on which the Rule Execution Server is available.



Save your changes

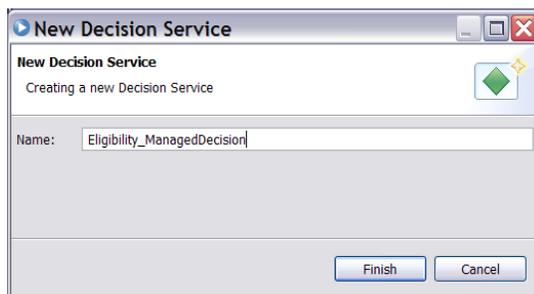
Step 3. Create the Decision Service for the Eligibility Managed Decision.

In the Decisions navigator click the + sign to create a new Decision Service.



Click **Decision Service**.

In the Name field type **Eligibility_ManagedDecision** and click **Finish**.



Open the Diagram tab of the **Eligibility_ManagedDecision** Decision Service.
 Drag a **JRules Decision Service** onto the Canvas and rename it **Eligibility**.
 Select the **Sequence Flow** icon.



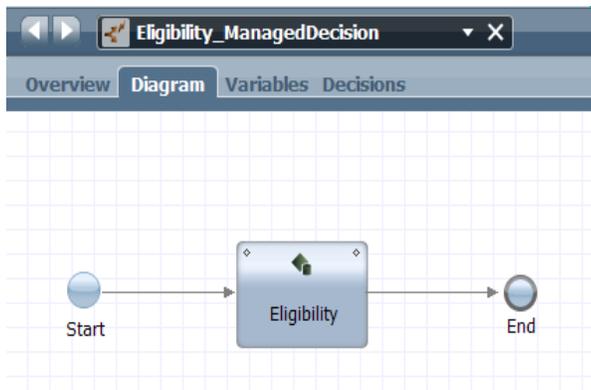
Connect the **Start** node to the **Eligibility** node.
 Connect the **Eligibility** node to the **End** node.
 Reselect the **Selection Flow** icon,



Click in the canvas – right click and select **Tidy Layout**.

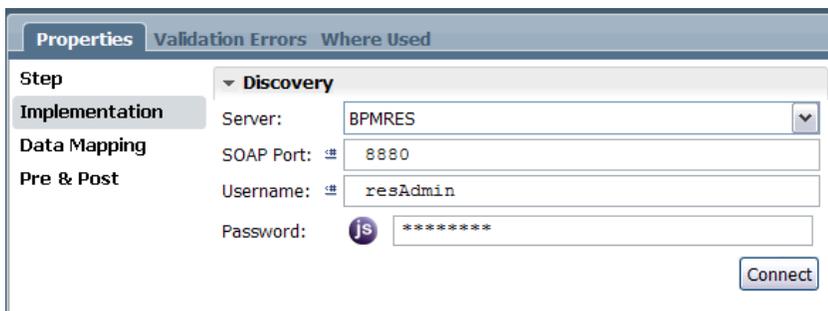
Save your work.

The new decision service should look as below.



Step 4. Bind the Decision Services to the Hosted Transparent Decision Services from JRules.

Open the **Eligibility_ManagedDecision** Diagram.
 Select the **Eligibility** node and in the **Properties** panel select the **Implementation** Tab.
 In the **Discovery** panel you define the the Rule Execution server hosting the HTDS Decisions.
 In the **Server** Field select the **BPMRES** server you defined earlier.
 In **Username** field type **resAdmin**.
 In the **Password** field type **resAdmin**.



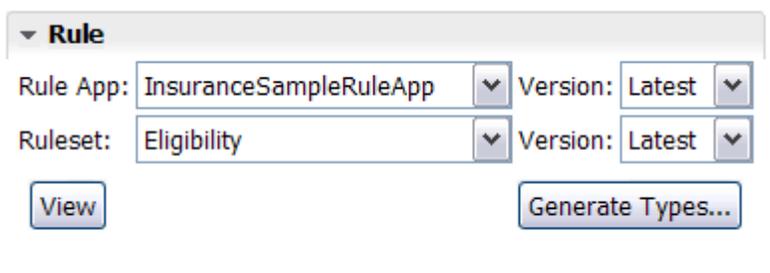
Click **Connect**.

In the **Rules** Panel the available Rule Apps and Rules are displayed.

From the **Rule App** pulldown select **InsuranceSampleRuleApp**.

From the **Ruleset** pulldown select **Eligibility**.

Leave the **Version** fields at **Latest**. This means that the most recent versions of the managed decisions will always be used.

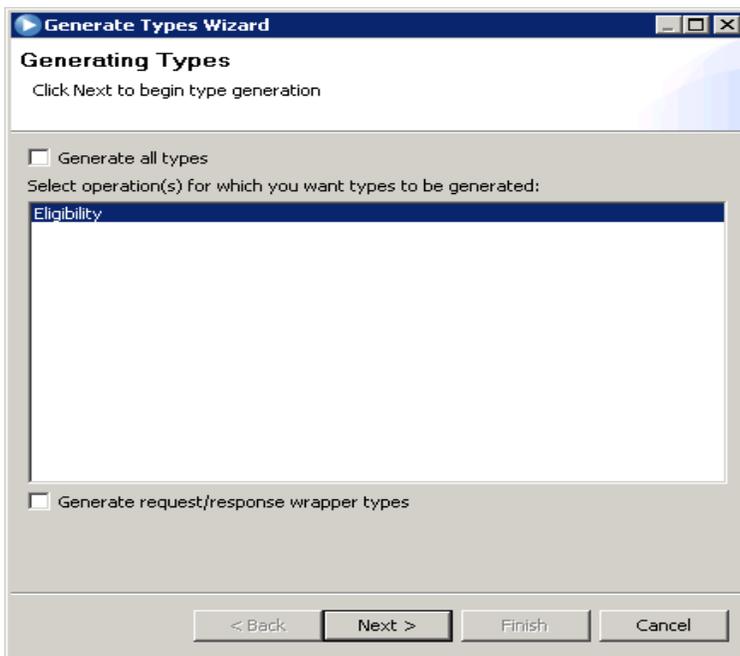


The screenshot shows a configuration panel for a rule. It has a dropdown menu labeled 'Rule' which is expanded. Below it, there are two rows of configuration. The first row is 'Rule App: InsuranceSampleRuleApp' with a dropdown arrow, followed by 'Version: Latest' with a dropdown arrow. The second row is 'Ruleset: Eligibility' with a dropdown arrow, followed by 'Version: Latest' with a dropdown arrow. At the bottom left is a 'View' button, and at the bottom right is a 'Generate Types...' button.

Now we will import the information models used by the rules.

Click **Generate Types...**

In the screen that results leave all options deselected as we only need the minimum of new types.



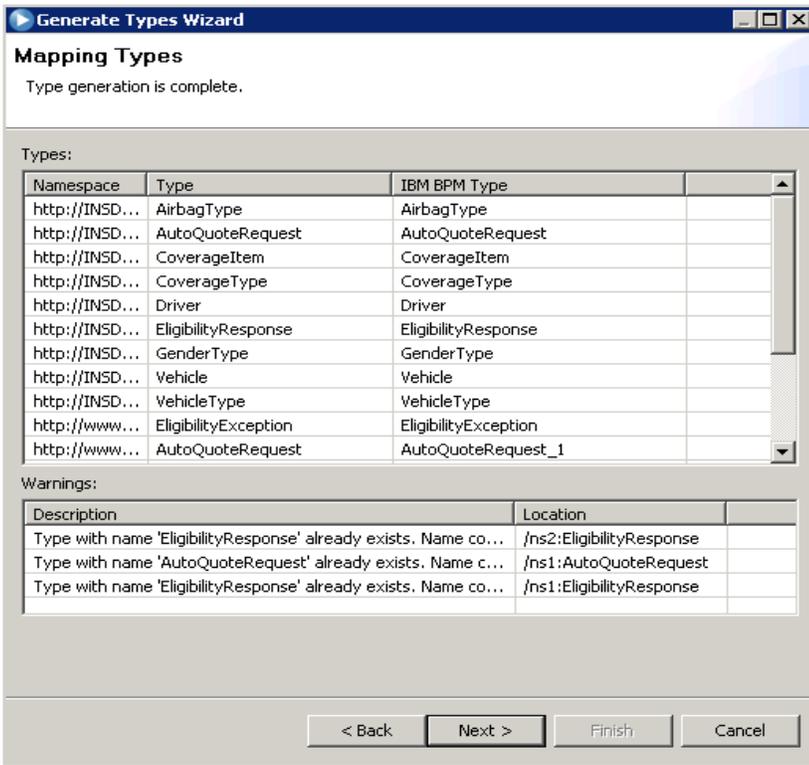
The screenshot shows a 'Generate Types Wizard' dialog box. The title bar says 'Generate Types Wizard'. The main title is 'Generating Types' and the subtitle is 'Click Next to begin type generation'. There is a checkbox labeled 'Generate all types' which is unchecked. Below it is the text 'Select operation(s) for which you want types to be generated:' followed by a list box containing the text 'Eligibility'. At the bottom, there is another checkbox labeled 'Generate request/response wrapper types' which is also unchecked. At the very bottom are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

Click **Next >**.

The Mapping Types generation screen shows the types generated and any naming conflicts.

Click **Next >**.

The **Type Generation Summary** screen shows the types generated.



Note:

The duplicated **AutoQuoteRequest** in the INSDemo namespace is mapped to **AutoQuoteRequest_1**.

The duplicated **EligibilityResponse** in the www.ilog.com/param namespace is mapped to

EligibilityResponse_2.

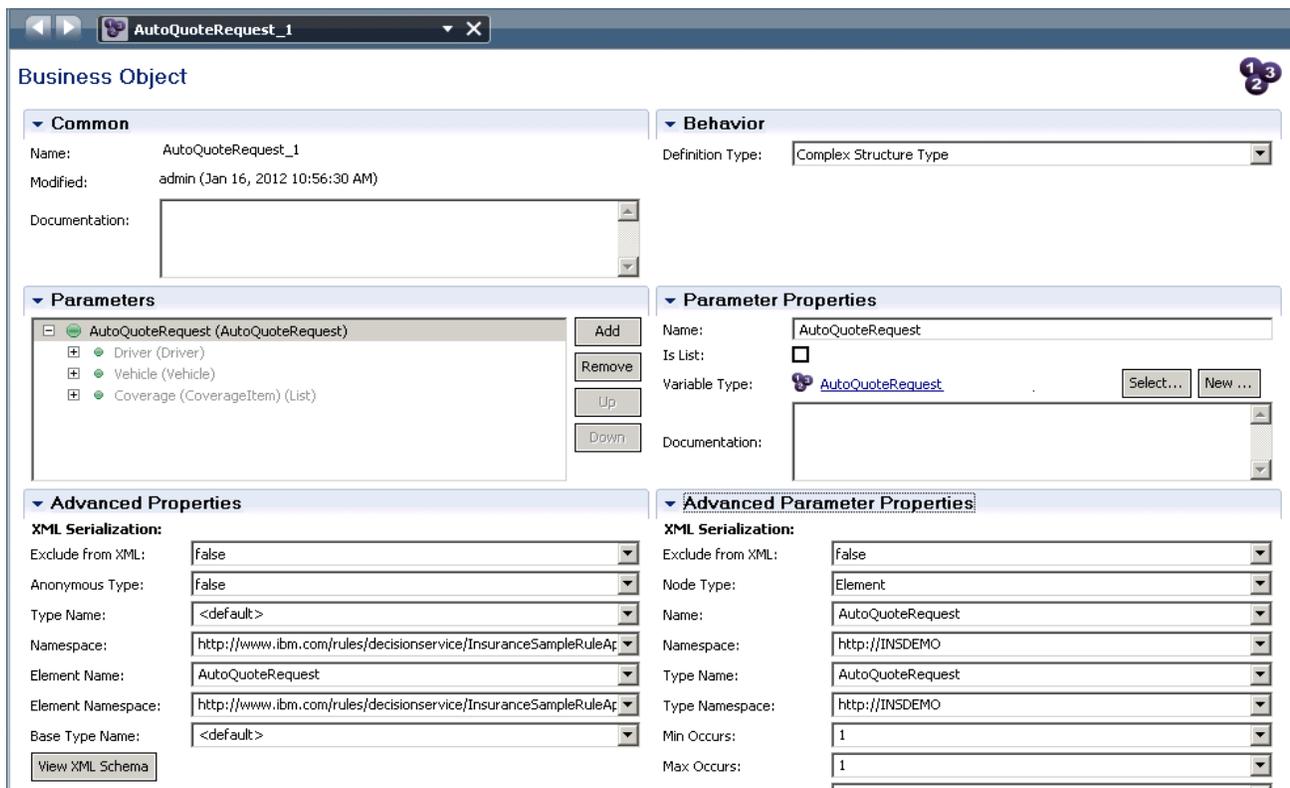
Click **Finish** to exit the wizard.



Navigate to the **Data** entry where you will see the list of Business Objects that have been created.

Examine the Business Objects to check that the information model has been correctly retained.

Double Click **AutoQuoteRequest_1** and examine it in the Business Object Editor.



Step 5. Mapping decision service variables.

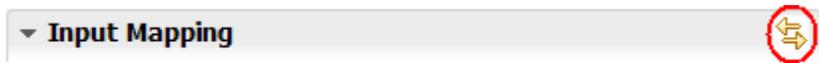
Because the HTDS managed decision services use wrapper types, we need to map these HTDS parameters to decision service variables that only use the INSDemo business objects.

Open the **Eligibility_ManagedDecision** Diagram.

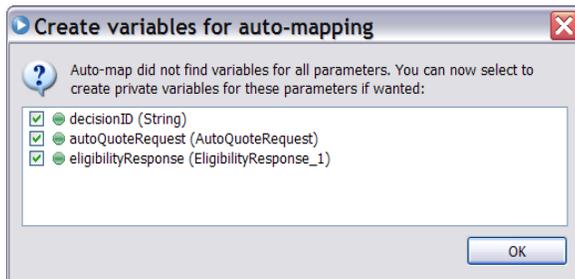
Select the **Eligibility** node and open the **Properties** screen.

Select the **Data Mapping** tab.

On the **Input Mapping** panel click the Auto-map icon.

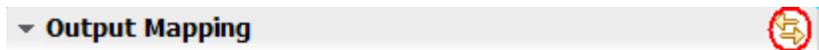


Select all three of the parameters to map.

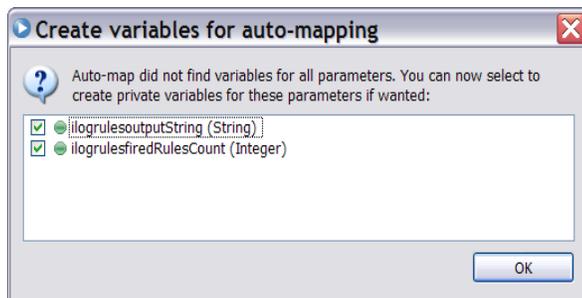


Click **OK**.

On the **Output Mapping** panel click the Auto-map icon.

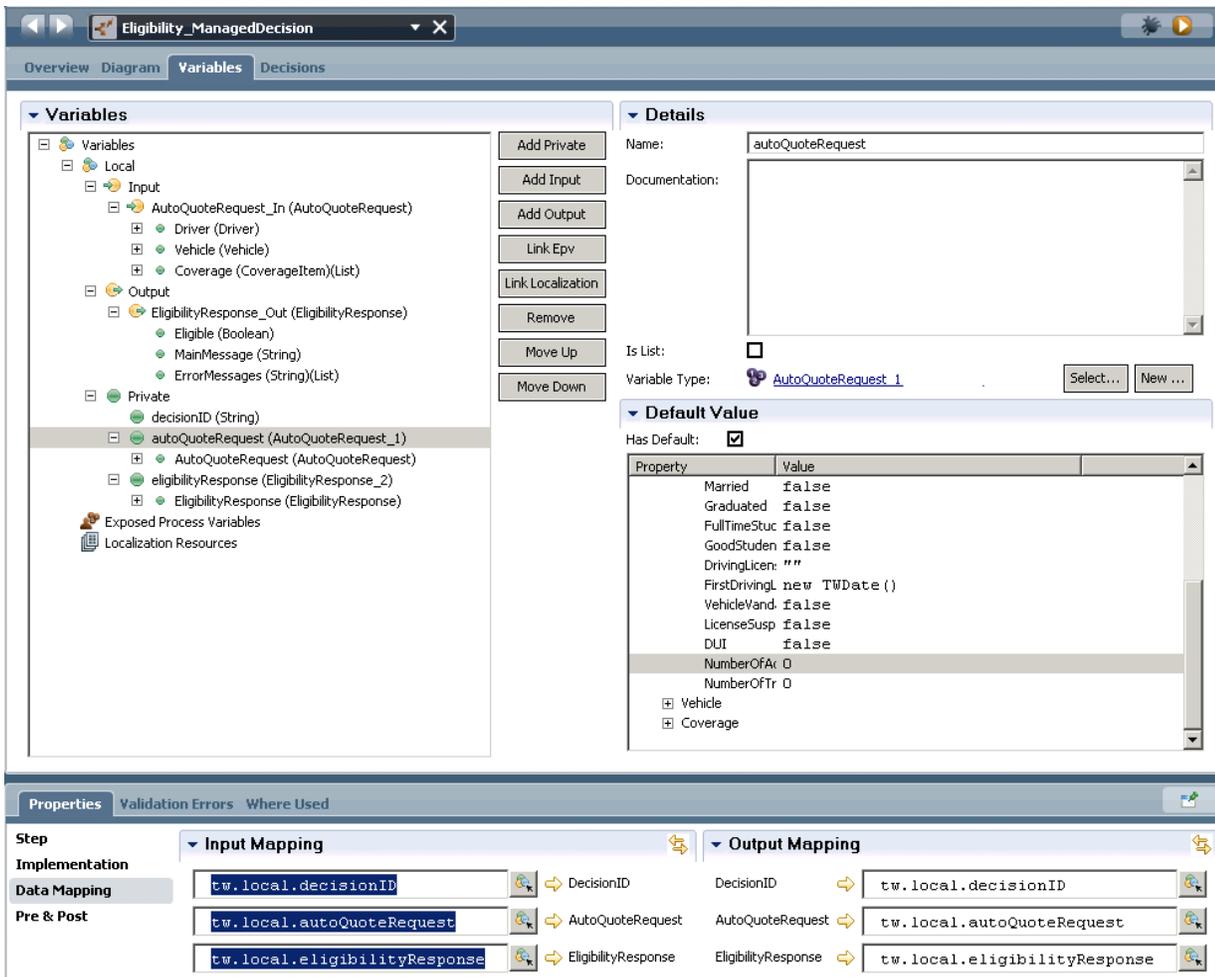


Select the remaining two parameters – as all parameters are input parameters, variables already exist for the rest of the output parameters.

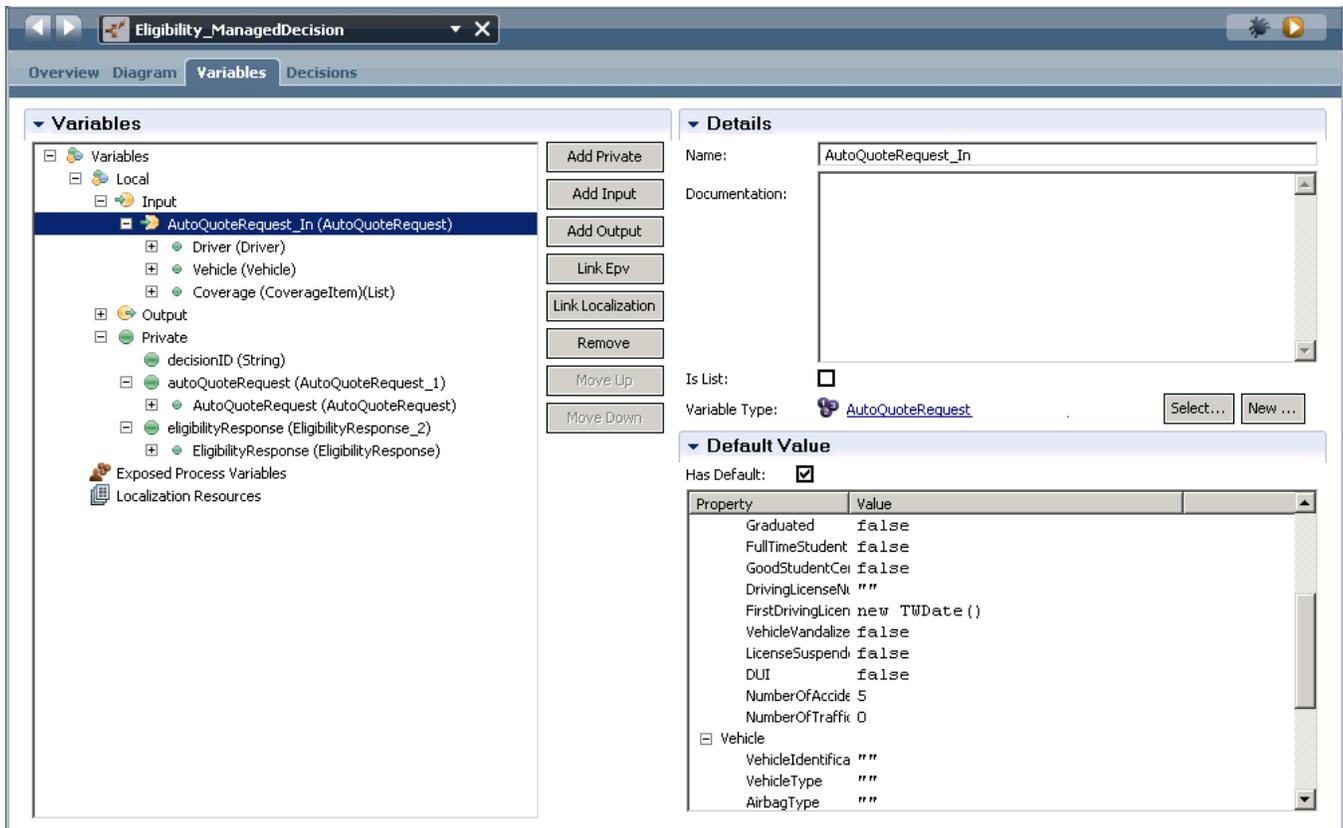


Click **OK**.

Selecting the Variables tab shows all the local variables that have been created from the imported Business Objects.

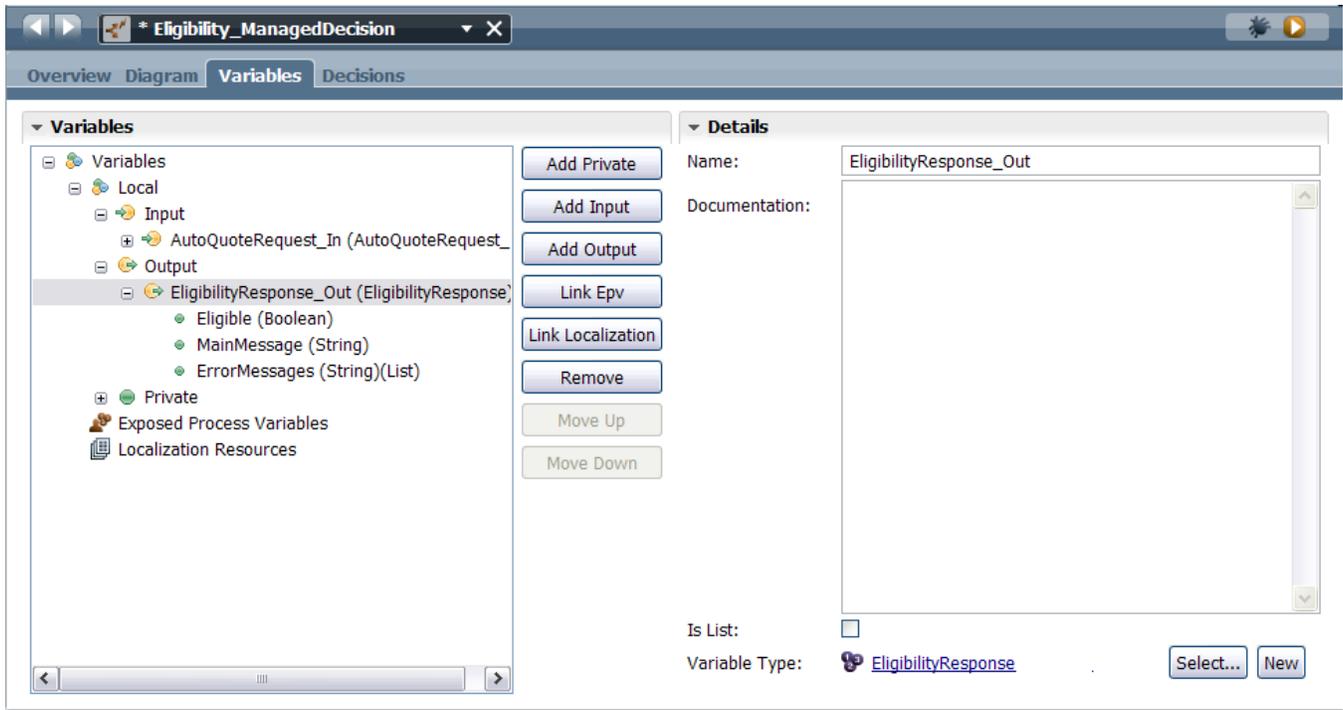


Now you need to create the input and output parameters to the **Eligibility_ManagedDecision** decision service. In the Variables Screen click **Add Input**. In the **Name:** field, type **AutoQuoteRequest_In**. In the **Variable Type:** field, click **Select...** and select the **AutoQuoteRequest** Business Object. Select the **Has Default** checkbox. Browse down to the **NumberOfAccidents** field and set the value to **5**.

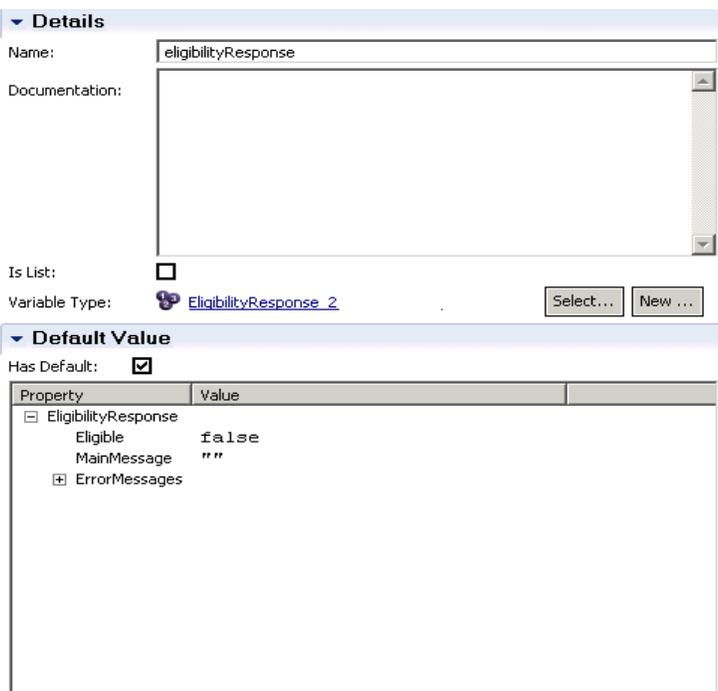


In the Variables Screen click **Add Output**.
 In the **Name:** field type **EligibilityResponse_Out**.
 In the **Variable Type:** field click **Select...** and select the **EligibilityResponse** Business Object.

Save your work.



Finally select the private variables and check the Has Default checkbox. This makes sure all HTDS parameters are initialized.



Finally you need to map between these input and output parameters and the private variables.

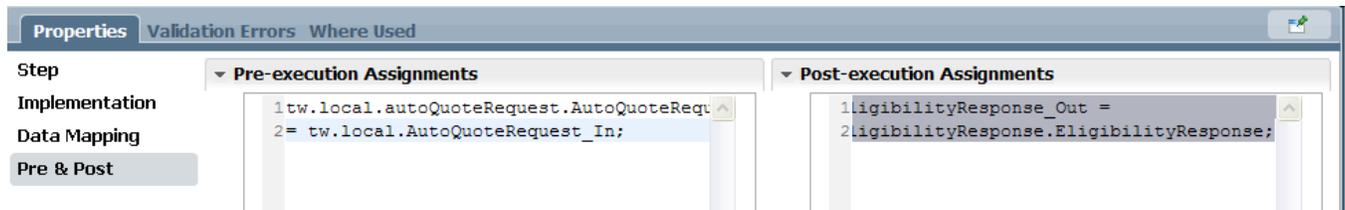
In the drawing screen select the Eligible Node and in the properties screen select the Pre and Post Tab.

In the **Pre-execution Assignments** panel Type:

```
tw.local.autoQuoteRequest.AutoQuoteRequest = tw.local.AutoQuoteRequest_In;
```

In the **Post-execution Assignments** panel type:

```
tw.local.EligibilityResponse_Out = tw.local.eligibilityResponse.EligibilityResponse;
```



Save your work and you have now completed the variable mapping.

Step 6. Test the Decision Service.

You can now test the decision service in isolation.

Open the **Diagram** tab for the **Eligibility_ManagedDecision** and click the Debug icon.



A browser opens showing the node and variable values.

Navigate down the variables to check that the **NumberOfAccidents** field has been correctly set.

IBM Business Process Manager Service Debug

Service Eligibility_ManagedDecision
 Item Type ILOGConnector
 Item Name Eligibility

| Namespace: local | | |
|------------------|------------------|--|
| Name | Type | Value |
| autoQuoteRequest | AutoQuoteRequest | <pre> <object type="AutoQuoteRequest"> <property name="AutoQuoteRequest" type="AutoQuoteRequest_1"> <property name="Coverage" type="CoverageItem[]"> <arrayElement size="1"> <item type="CoverageItem"> <property name="CoverageType" type="String" /> <property name="Deductible" type="Integer" tw-id="id:0">0</p <property name="MaxLimit" type="Integer" tw-ref="id:0" /> <property name="MinLimit" type="Integer" tw-ref="id:0" /> </item> </arrayElement> </property> <property name="Driver" type="Driver"> <property name="LicenseSuspendedOrRevoked" type="Boolean">f <property name="LastName" type="String" /> <property name="Gender" type="String" /> <property name="DriverID" type="Integer" tw-ref="id:0" /> <property name="DrivingLicenseNumber" type="String" /> <property name="NumberOfAccidents" type="Integer">5</property> <property name="NumberOfTrafficTickets" type="Integer" tw-ref="tic <property name="Occupation" type="String" /> <property name="VehicleVandalizedOrStolen" type="Boolean">fals <property name="Married" type="Boolean">>false</property> <property name="DUI" type="Boolean" >>false</property> <property name="Graduated" type="Boolean" >>false</property> <property name="GoodStudentCertificate" type="Boolean" >>false</ <property name="FirstDrivingLicenseDt" type="Date"> <fullYear>2011</fullYear> </property> </property> </object> </pre> |

Click **Step** to invoke the HTDS service.

The browser will be updated to show the result of invoking the HTDS decision service.

IBM Business Process Manager Service Debug

Service Eligibility_ManagedDecision
 Item Type Exit Point
 Item Name End

| Namespace: local | | |
|------------------|------------------|--|
| Name | Type | Value |
| autoQuoteRequest | AutoQuoteRequest | <pre> <object type="AutoQuoteRequest"> <property name="AutoQuoteRequest" type="AutoQuoteRequest_1"> </pre> |

Scroll down to the **EligibilityResponse_Out** variable to observe the Rules response.

| | | |
|-------------------------|-----------------------|--|
| decisionID | String | 575f5a7c-d8a8-4911-b9b3-960eb2741ce6 |
| eligibilityResponse | EligibilityResponse_1 | <pre><object type="EligibilityResponse_1"> <property name="EligibilityResponse" type="EligibilityResponse"> <property name="ErrorMessages" type="String[]"> <arrayElement size="1"> <item type="String" /> </arrayElement> </property> <property name="Eligible" type="Boolean">>false</property> <property name="MainMessage" type="String">The driver has had too many accidents</property> </property> </object></pre> |
| EligibilityResponse_Out | EligibilityResponse | <pre><object type="EligibilityResponse"> <property name="ErrorMessages" type="String[]"> <arrayElement size="1"> <item type="String" /> </arrayElement> </property> <property name="Eligible" type="Boolean">>false</property> <property name="MainMessage" type="String">The driver has had too many accidents</property> </object></pre> |

You have now successfully tested the decision service.

Step 7. Using the Managed Decision Service in a Process.

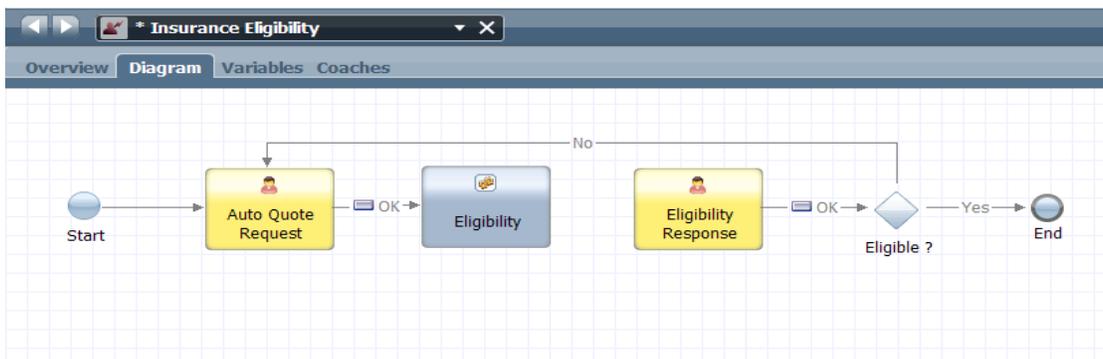
This final steps are optional and involves developing a Human process that invokes the managed decision.

Create a new Human Interface

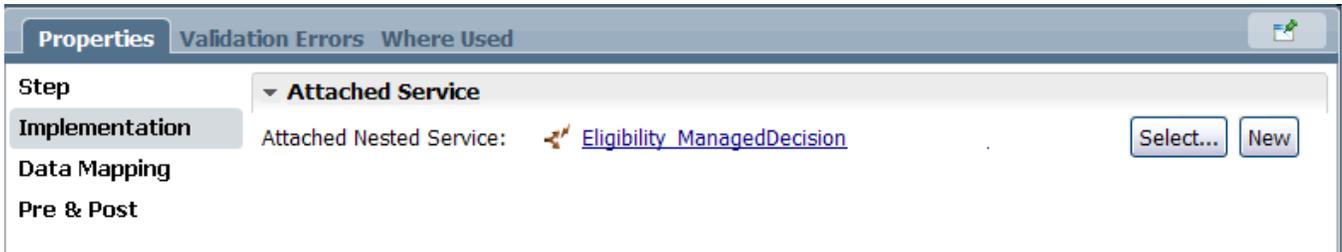


Give it the name **Insurance Eligibility**.

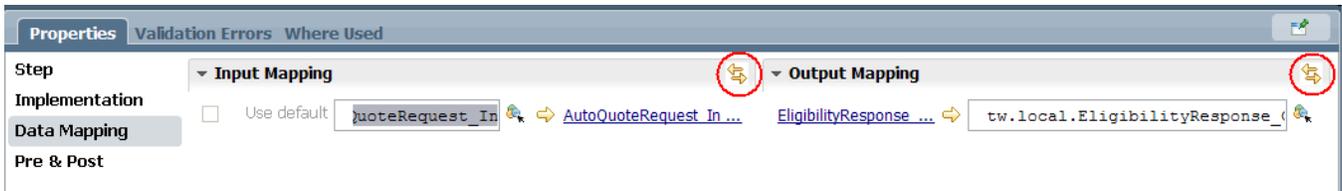
Create the following structure in the canvas. Note that you cannot yet connect the Eligibility Nested service to the Coach.



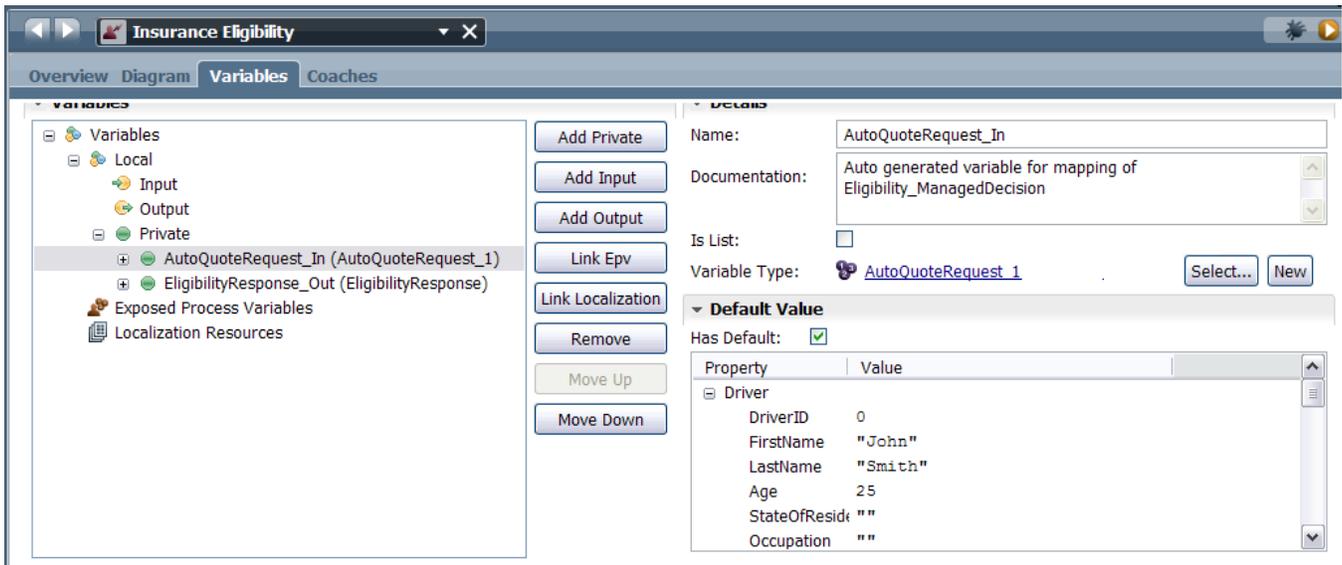
Select the **Eligibility** nested Service and navigate to the **Properties** View and **Implementation** tab.
 Click the **Select** Button and select the **Eligibility_ManagedDecision** in the Services section.



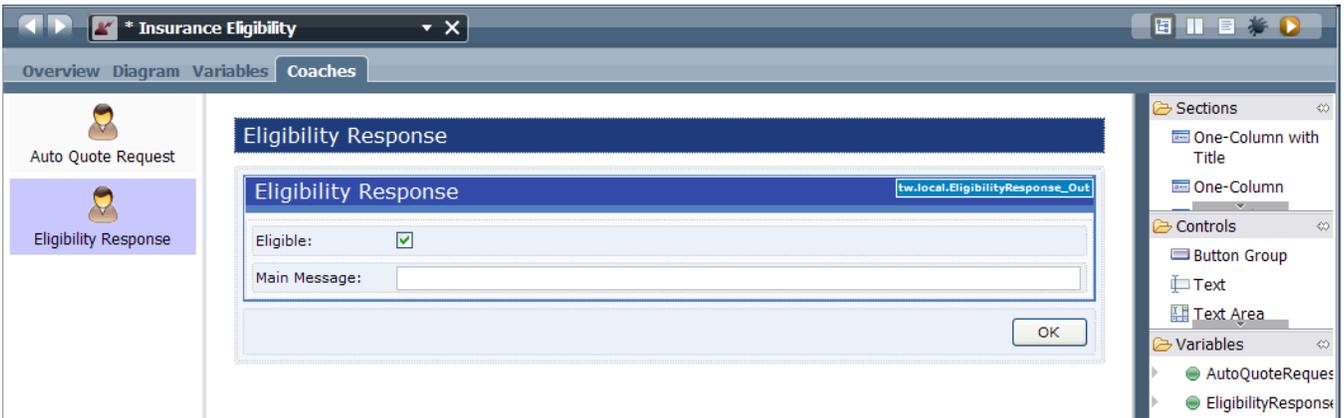
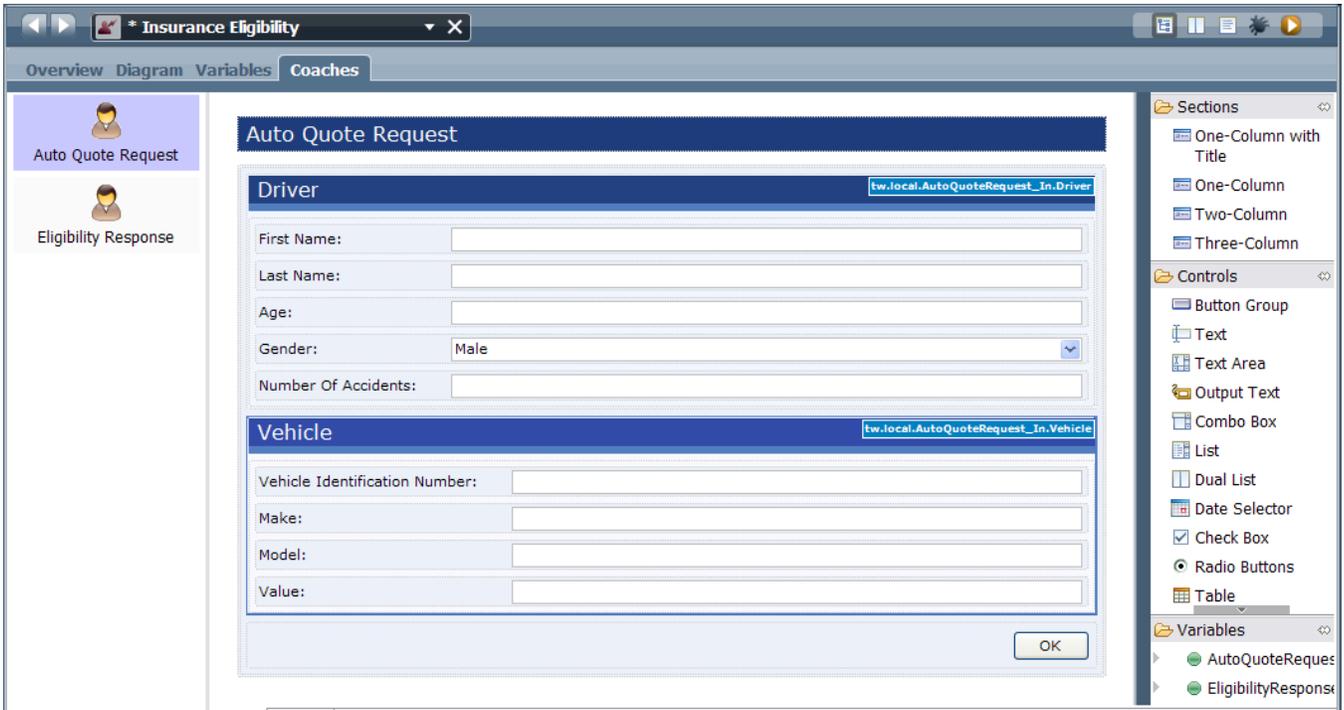
Navigate to the **Data Mapping** tab and click each of the Automap icons to generate local variables for the input and output parameters of the service.



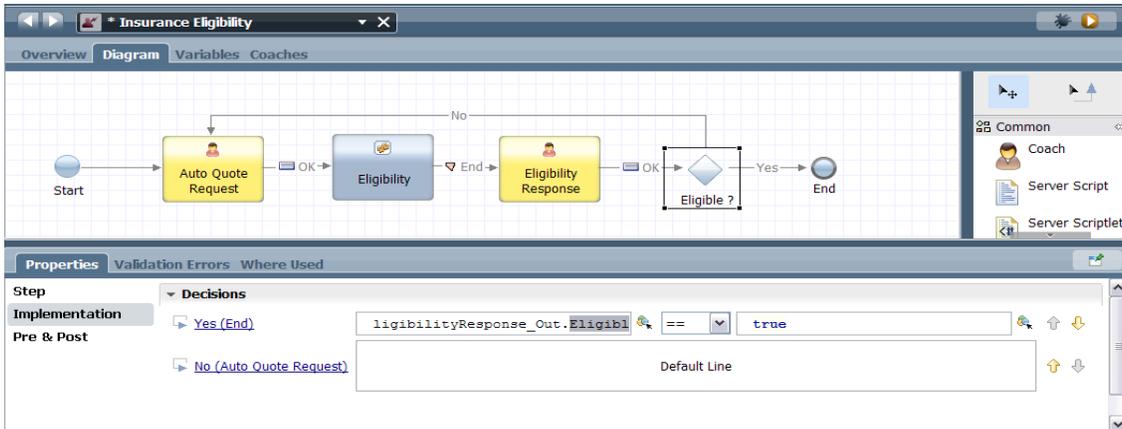
Initialize the variables that have been created with default values



Create the two Coaches mapping the fields to the private Variables generated by the mapping.



Connect up the final wire and establish the gateway conditions.



Save your work.

Step 8. Running the Managed Decision Service in a Process.

Run the **Insurance Eligibility** Human Service.
The default values are shown initially.

Auto Quote Request

Driver

First Name:

Last Name:

Age:

Gender: ▼

Number Of Accidents:

Vehicle

Vehicle Identification Number:

Make:

Model:

Value:

Click **OK** and these get rejected as Not eligible.

Eligibility Response

Eligible:

Main Message: The driver has had too many accidents

OK

Click **OK** again and enter a lower number of accidents eg **2**.

Auto Quote Request

Driver

First Name: John

Last Name: Smith

Age: 25

Gender: Male

Number Of Accidents: 2

Vehicle

Vehicle Identification Number: 1234

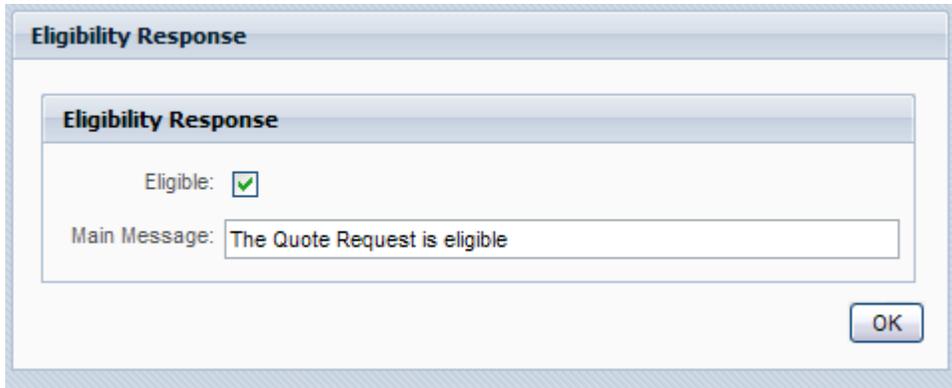
Make: Lemon

Model: Yellow

Value: 0

OK

Click **OK** and this time the Quote is eligible.



Click **OK** again and the service exits.

You have now used an HTDS managed decision service within a BPMN process.