

Tutorial SemTalk Version 4.4

EPC Edition



Contents

1.	About Event-driven Process Chains (EPC).....	4
2.	Opening the SemTalk EPC Edition.....	4
2.1.	Quick Review of Key Visio Window Commands.....	6
2.2.	EPC Ribbon Tab.....	7
2.2.1.	Consistency Checks.....	7
2.2.2.	EPC Rules Options.....	7
2.3.	SemTalk's Visio EPC Stencil.....	8
3.	Opening the SemTalk EPC Edition.....	8
3.1.	Adding Process Elements	8
3.2.	Compare Versions.....	10
3.3.	Relationships between EPC Elements:.....	11
3.3.1.	Adding New Relation Connectors.....	12
3.4.	Cardinalities.....	15
3.5.	Adding a Role/Person to a Function:.....	16
3.5.1.	Adding Person, Position or Organizational Unit Shapes	16
3.5.2.	Using Swimlanes.....	17
3.6.	Adding other EPC information.....	19
3.7.	Using Object-Oriented Process Modeling with EPCs	20
3.8.	Editing process elements	23
3.8.1.	Function Edit Dialog	24
3.8.2.	Attachments and Visio Hyperlinks	25
3.8.3.	Function: "Hum. Resource" Tab	26
3.8.4.	Function: "Measures" Tab	27
3.8.5.	Process Control Flow Dialog	27
3.9.	Deleting process elements	28
4.	Value Chains	29
5.	Organizational Charts (OrgCharts)	30
6.	Class Diagrams.....	31
7.	Physical Resources.....	32
8.	Refinements.....	35
9.	Customizing Colors.....	36
10.	Simulation	37
11.	Distributed Modeling	37
12.	XPDL Export.....	39
13.	Importing and Exporting of ARIS and EPML	40
13.1.	AML.....	41
14.	General SemTalk Features	44
14.1.	Extras and Tools	44
14.2.	Microsoft Office Word Export.....	44
14.3.	Microsoft Office PowerPoint Export.....	46
14.4.	Microsoft Office MS Excel Import.....	46

14.5.	Bulk Import Spreadsheet.....	47
14.6.	Copying Flow Elements from Document to Document.....	48
14.7.	Managing Variants and ClusterIDs.....	48
14.8.	Delete unused elements before saving	49
14.9.	HTML Generator	49
14.10.	Report Generator.....	58
14.11.	Table Editor	61
14.12.	Macros.....	62
14.13.	Replace.....	62

1. About Event-driven Process Chains (EPC)

The concept of “Event driven Process Chains” (EPC’s) was introduced by Keller, Nüttgens and Scheer in the early 1980’s.

SemTalk EPC Edition is a standard SemTalk methodology based on the extensive project experience, extending the EPC method to integrate object-oriented process modeling to better support the creation of reference models.

Key functions include:

- Automatic semantic check of EPC symbols during modeling
- Direct export / import of ARIS models
- Automatic selection of methodologically consistent connectors and object types.

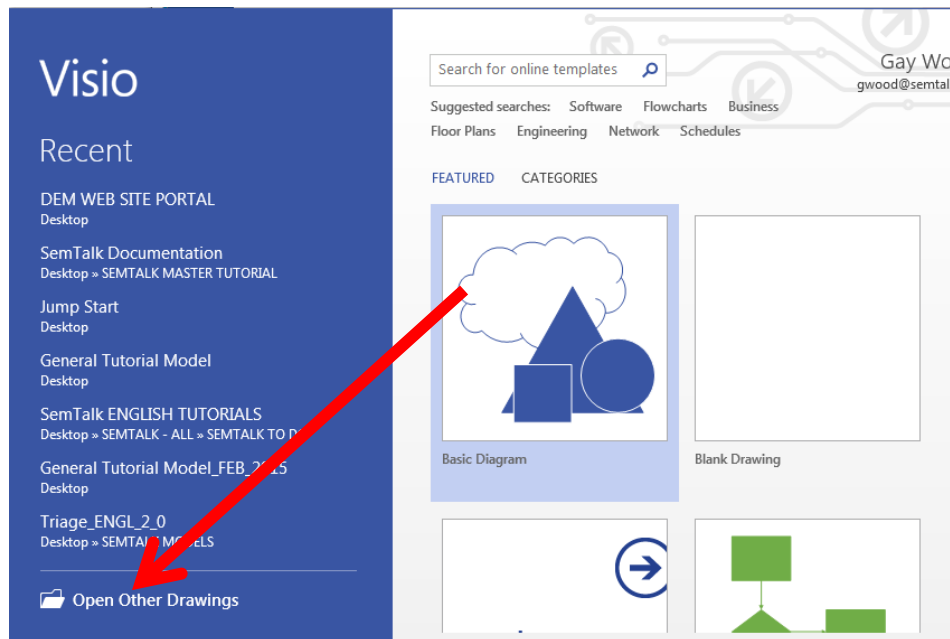
Note: This tutorial assumes that the reader is familiar with basic Visio commands and the general SemTalk tutorial that covers information about basic SemTalk functions such as:

- Modeling classes with attributes, associations, and inheritance,
- Adjusting textual layouts,
- Navigation: Expand, Search, GoTo & Paste;
- Integrating objects from external models &
- SemTalk implementation

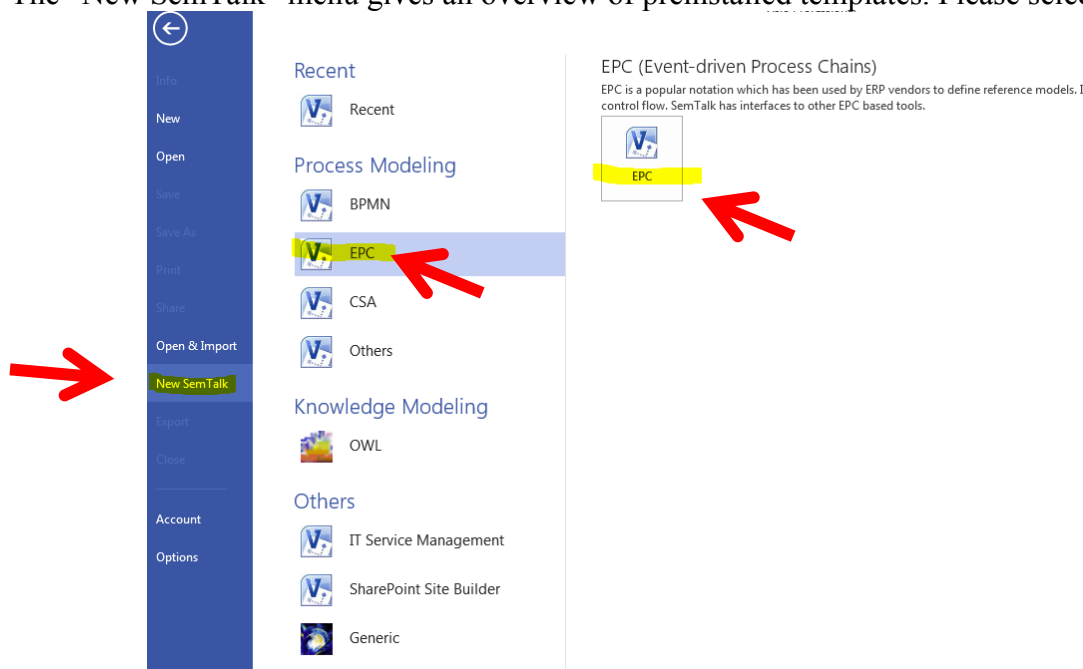
EPC shapes are shipped with Microsoft Visio. While Visio-based business process modeling using Visio with EPC shapes is easy to use, Visio alone is of limited use because it is not possible to show differences between model objects or to alter how they are shown in diagrams. Navigation through the model is also cumbersome. Export / import of model information is limited and few meaningful reports can be produced. Sharing model information with others, in applications such as SharePoint, is also not possible. Without adding SemTalk functionality, model consistency is difficult to maintain and model information is difficult to share and update. SemTalk delivers access to EPC methodology rule-based modeling so models are syntactically correct, consistent and meaningful. This insures that technical interface descriptions and reports are of the highest quality. SemTalk integration with SharePoint makes it easy to share and maintain modeling data over time at minimal effort and maximal benefit

2. Opening the SemTalk EPC Edition

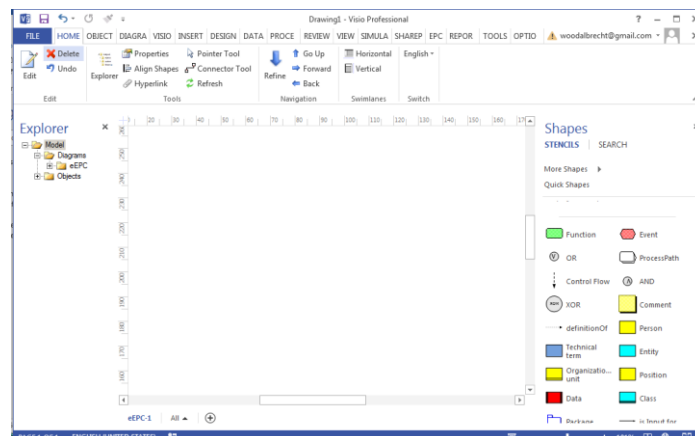
After installing SemTalk, open Visio. SemTalk will start automatically. If you are already using Visio, simply select “Open Other Drawings” file menu and select “New SemTalk”. For all Visio versions prior to Visio 2013, please make sure that you have installed the “SemTalk addin for Visio 2010” for Visio 2010. In this case, use “New SemTalk” to select your desired template. If you have questions, please contact support@semtalk.com



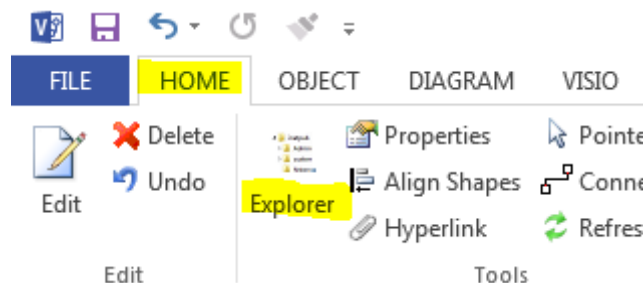
The “New SemTalk” menu gives an overview of preinstalled templates. Please select “EPC”.



After opening Visio you should see a window that looks like below:



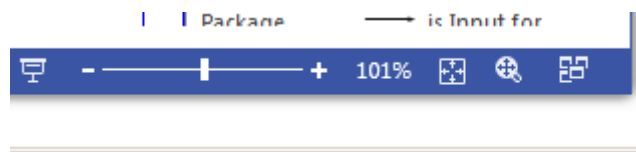
If the SemTalk Explorer is not open, click on the Explorer Button on the Home Tab.



The SemTalk Explorer gives you structured access to objects in your model and can be used to add additional objects.

2.1. Quick Review of Key Visio Window Commands

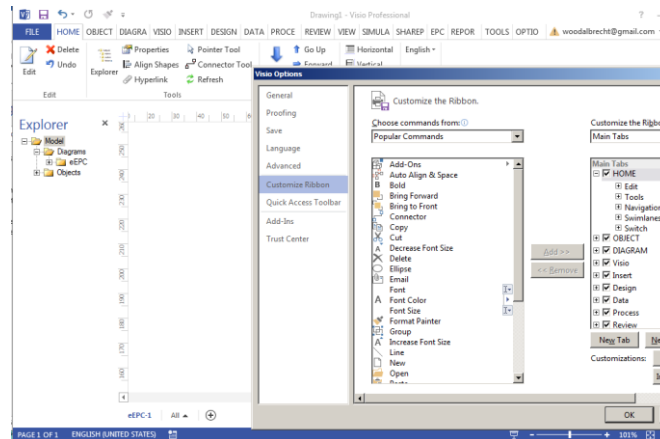
Visio's Pan & Zoom Window located in the lower right corner:



The Explorer, Stencil Windows and pan & Zoom Window can be “docked” to the Visio pane borders, with or without using the Auto hide mode.

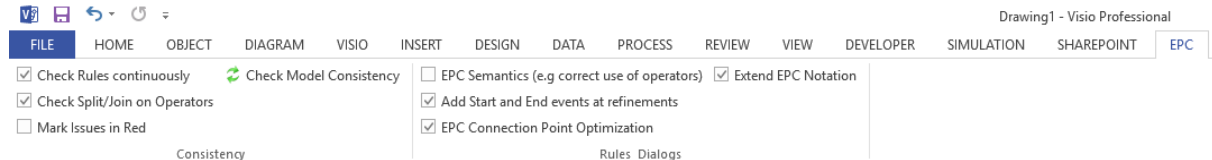
The Visio Ribbon:

SemTalk add-in for Visio supports Visio's customized ribbon and window layouts so that your workspace fits your unique modeling needs. Almost all of commands found in pull-down menus can be docked into your workspace. Simply right click on the command and select your desired viewing option for the command. Please refer to Visio documentation for additional help.



2.2. EPC Ribbon Tab

When EPC Notation is used, the ribbon will display the tab “EPC“, where special options for EPC notation are available.



2.2.1. Consistency Checks

The Consistency segment of the ribbon contains options to check model consistency.

- **Check Rules continuously:** Allows SemTalk to live check model content for EPC rules compliance while modeling. This option is best used in combination with “Mark Issues in Red” option so that consistency errors are immediately visualized. If enabled after SemTalk objects have already been created, existing objects are not re-checked, only newly created objects will be checked. Hit the refresh button to check all previously modeled objects.
- **Mark Issues in Red:** Shapes that do not comply with EPC rules are shown in red.
- **Check Split/Join on Operators:** EPC method defines that Operators (OR, XOR) used to split process flows should merge again. When enabled, SemTalk marks missing join Operators as issues.
- **Check Model Consistency:** Checks the consistency of the entire document and opens a window showing all found issues. If the Consistency window is open, and “Check Rules continuously” is enabled, the issue list is automatically updated as the user is working.

2.2.2. EPC Rules Options

The Rules Dialogs segment of the ribbon contains options to extend or optimize EPC modeling.

- **EPC Semantics:** Enables SemTalk to force users to adhere to strict rules when building EPC models (e.g. correctly use operators, correct number of incoming or outgoing flows). When enabled, certain connections are not possible.

- Add Start and End events at refinements: Start and End event shapes are automatically added to internal refinement pages if the refined Function is correctly connected to named events prior to the refinement being created.
- EPC Connection Point Optimization: Checks to see if connectors leaving a downstream operator are attached to the correct side of the operator. This option is not a true consistency check, it is designed to support better data visualization.
- Extend EPC Notation: Extends basic EPC classes in the EPC Meta model by assigning the following classes SemTalk object functionality:
 - Application system type
 - ERM Attribute
 - Key performance indicator instance
 - Knowledge
 - Module type
 - Risk
 - Screen

The corresponding shapes are in the EPC stencil already included.

2.3. SemTalk's Visio EPC Stencil

SemTalk's Extended EPC Stencil contains the following objects:



NOTE: For additional information about the use of individual objects, please refer to EPC Reference manuals and websites such as https://en.wikipedia.org/wiki/Event-driven_process_chain

3. Opening the SemTalk EPC Edition

3.1. Adding Process Elements

New elements can be added to the existing processes by simply dragging desired objects from the Stencil to your diagram (or "process"). Rename your new objects by double-clicking on



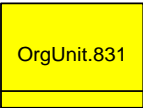

the object and entering the new name or by using SemTalk's Compose feature described in this Tutorial under 'Object-Oriented Process Modeling with EPCs'.




3.2. EPC Methodology Review:

A process is a sequence of Functions, Events, Operators and other elements.

Functions are activated by one or more preceding Events and they are able to trigger Events. Functions can have only one incoming link (Control Flow) and one outgoing link. If multiple Events are involved, operators such as AND, OR; XOR must be used.

3.2.1. EPC Object Types with Standard Graphical Representations

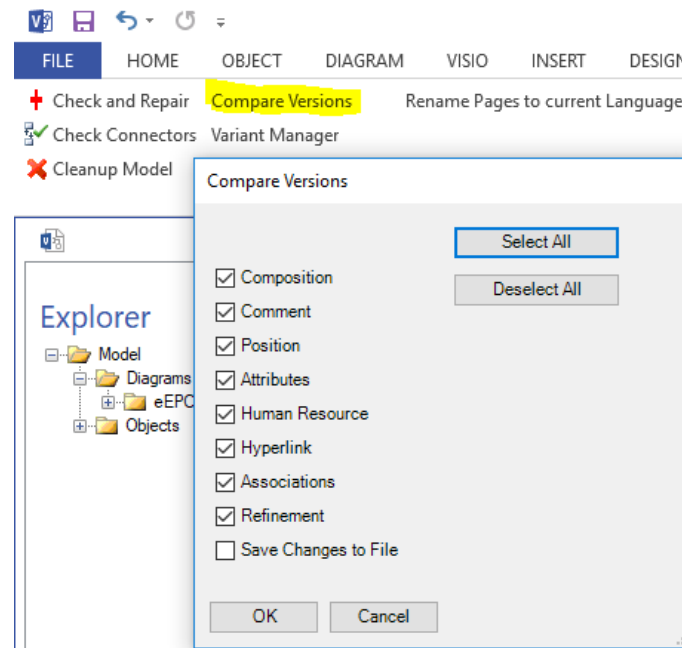
	Events are passive elements in EPC. They describe under what circumstances a function or a process works or which state a function or a process results. Examples of events are "requirement captured", "material on stock", etc. In the EPC graph an event is represented as hexagon
	Functions are active elements in EPC. They model the tasks or activities within the company. Functions describe transformations from an initial state to a resulting state. In case different resulting states can occur, the selection of the respective resulting state can be modeled explicitly as a decision function using logical connectors. Functions can be refined into another EPC. In this case it is called hierarchical function. Examples of functions are "capture requirement", "check material on stock", etc. In the EPC graph a function is represented as rounded rectangle. In general, a EPC diagram 'must' start with event and end with event.
	Process Owner: Usually part of the Organizational Unit who is responsible for a Function.
	Organization units determine which person or organization within the structure of an enterprise is responsible for a specific function. Examples are "sales department", "sales manager", "procurement manager", etc. It is represented as an ellipse with a vertical line.
	In the EPC, the information, material, or resource objects portray objects in the real world, for example business objects, entities, etc., which can be input data serving as the basis for a function, or output data produced by a function. Examples are "material", "order", etc. In the EPC graph such an object is represented as rectangle.

	Branch and merge correspond to making decision of which path to choose among several control flows. A branch may have one incoming control flow and two or more outgoing control flows. When the condition is fulfilled, a branch activates exactly only one of the outgoing control flows and deactivates the others. The counterpart of a branch is a merge. A merge may have two or more incoming flows and one outgoing control flow. A merge synchronizes an activated and the deactivated alternatives. The control will then be passed to the next element after the merge. A branch in the EPC is represented by an opening XOR, whereas a merge is represented as a closing XOR connectors.
	Fork and join correspond to activating all paths in the control flow concurrently. A fork may have one incoming control flow and two or more outgoing control flows. When the condition is fulfilled, a fork activates all of the outgoing control flows in parallel. A join may have two or more incoming control flows and one outgoing control flow. A join synchronizes all activated incoming control flows. In the EPC diagram how the concurrency achieved is not a matter. In reality the concurrency can be achieved by true parallelism or by virtual concurrency achieved by interleaving. A fork in the EPC is represented by an opening 'AND', whereas a join is represented as a closing 'AND' connectors
	An 'OR' relationship corresponds to activating one or more paths among control flows. An opening 'OR' connector may have one incoming control flow and two or more outgoing control flows. When the condition is fulfilled, an opening 'OR' connector activates one or more control flows and deactivates the rest of them. The counterpart of this is the closing 'OR' connector. When at least one of the incoming control flows is activated, the closing 'OR' connector will pass the control to the next element after it.

3.3. Compare Versions

SemTalk allows users to compare two documents to display the differences between them, such as when comparing different versions of the same process document.

Both documents need to be opened in the same Visio instance for the comparison tool to work. The Compare functionality is found in the Tools tab, in the Consistency segment. Use “Compare Versions”, to start the comparison. Here users select what kind of process information to compare. “Select All” compares all information. “Save Changes to File” option creates a .txt file which includes all comparison results. Click on the OK button to start the comparison.



All differences are listed in the subsequent pop-up window. In the screenshot example below, the 'document read' Event was renamed to 'document saved' and the Function "read document" was changed to 'save document'. Version comparison recognizes this and displays these name changes as 'missing', meaning that a Function/Event does not exist in a version because when the object was renamed, it became a different object.

Arrows to the left of the Object column indicates whether the item was in the first document opened or the second. An arrow pointing left refers to the first document and arrow to the right refers to the second document. Users can click on the rows to highlight the shapes in the Visio diagram.

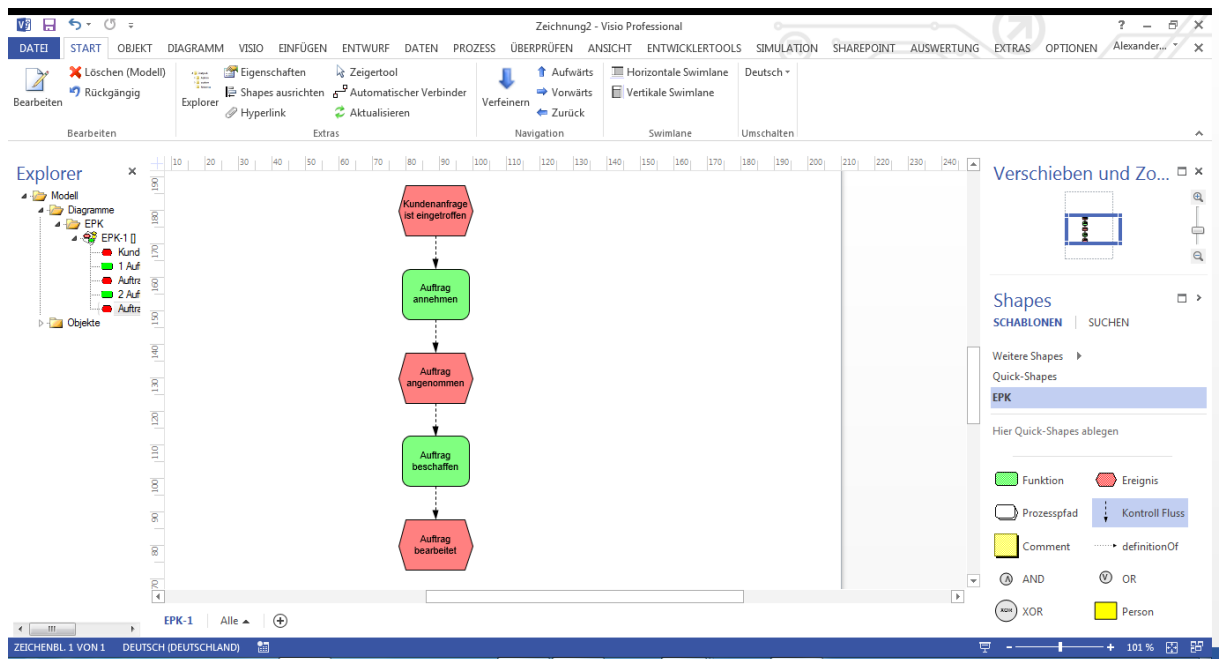
Object	Class	Change	<	>
eEPC-1				
< document saved	Event	Missing		
> document read	Event	Missing		
< save document.2	Function	Missing		
> Read dokumen...	Function	Missing		
< Write dokumen...	Function	Attributes	Strategy (I)	Strategy (FIFO)
< Write dokumen...	Function	Attributes	DistributionType...	DistributionType...
< Write dokumen...	Function	Human Resource	---	HR

Changed Attributes and Human Resources, etc. will also be indicated, as can be seen in the screenshot.






3.4. Relationships between EPC Elements:

- Control flow is used when connecting Events and Functions.
- Information Flow is created using the flow of information between Functions and Entities.

If you have created three Events and two Functions, the process would look like the following example:



The following object descriptions are borrowed from http://en.wikipedia.org/wiki/Event-driven_process_chain (Jan. 2007):

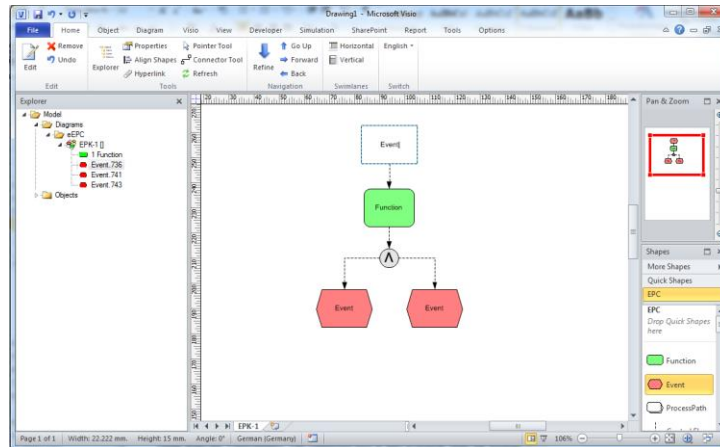
Function 	A function is a task or activity using information objects to support one or more business objectives.
Event 	An event describes a relevant state of an information object that controls or influences the further execution of the business process. It is generally preceded by a verb and is always followed by a noun (e.g. Order product).
AND 	AND Object The overall statement is true when both statements are simultaneously true.
OR 	OR Object The overall statement is true when either statement is true.
XOR 	XOR Object The overall statement is true if one set of statements or the other set of statement is true


3.4.1. Add a New Association Connector

Adding Associations to your EPC diagram is quite simple. Drop a “Control Flow” association connector shape from your Stencil onto your EPC diagram. If you hover its ends over one of the object’s “connection points”, you are notified by a green square that you can glue the

relation to the object. Then drag the connecting arrow to a connection point on your target object. A green square will appear when the connector is over the target object. If an association is not allowed, an error message will appear that the association between the connector and the object or between the two objects is not allowed.

After adding some elements and connecting them with the “Control Flow” association connector, your diagram will look similar to this one:



Visio’s Auto-Connect function and the Connector Tool found in the Home menu are useful ways to speed up modeling. When using the Connector Tool , you are in a "connection drawing mode". Cancel this mode by right-clicking the background of the chart and selecting "pointer tool".

You can also use the Auto-Connect Shape feature to link new objects to your already created objects. Move the mouse to the Event or to the Function you have created. Pale blue arrows will appear that point in different directions. Click on one of the arrows to create a connection to an allowed connector or Objects shape you want to connect to your object.

NOTE: You can use any Visio connectors that have two endpoints. The SemTalk add-in will either assign the correct relationship type to the graphic connector or, if there are no possible relationships between the two objects, an error message will appear stating that the objects cannot be connected.

3.4.2. SemTalk’s EPC Syntax Rule Checklist:

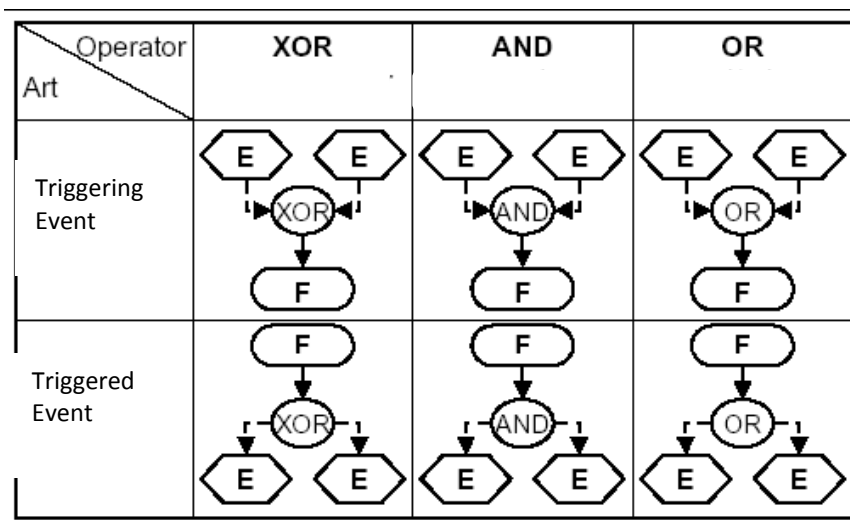
- Functions and Events may have only one outgoing control flow.
- Functions and Events may have only one ingoing control flow
- Each control flow must connect two different objects
- It is not allowed to use an OR or XOR operator after an event, since events are passive elements, which can make no decisions as functions do
- Operators may have multiple inputs (Join) or multiple outputs (Split), but not both
- Outputs of an operator must be of all of type function or all of type event
- Inputs of an operator must be of all of type function or all of type event
- Events and functions must be used alternating

SemTalk does NOT check the following useful rules in order to make flexible graphical modeling possible:

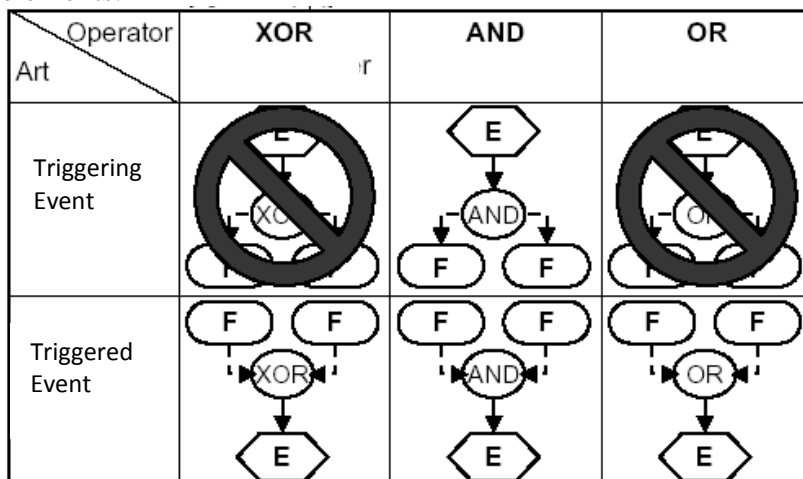
- Joins and Splits: If a process was split by an operator, the process may only be joined by the same type of operator
- Each EPC must start and finish with an event. (exception: Process Paths)
- There are no isolated control flow elements.
- At least one event must precede a function and at least one event must follow each function.

You may turn off EPC syntax checking via Options->SemTalk Options->EPC. This is recommended if you import EPC from 3rd Party Tools or from certain types of reference models ;-)

3.4.3. Overview of Linking Rules for Multiple Functions and Events



Multiple functions to an event or an event with multiple functions can also be linked. On an XOR or OR, a connector must follow because events cannot make decisions as passive elements.

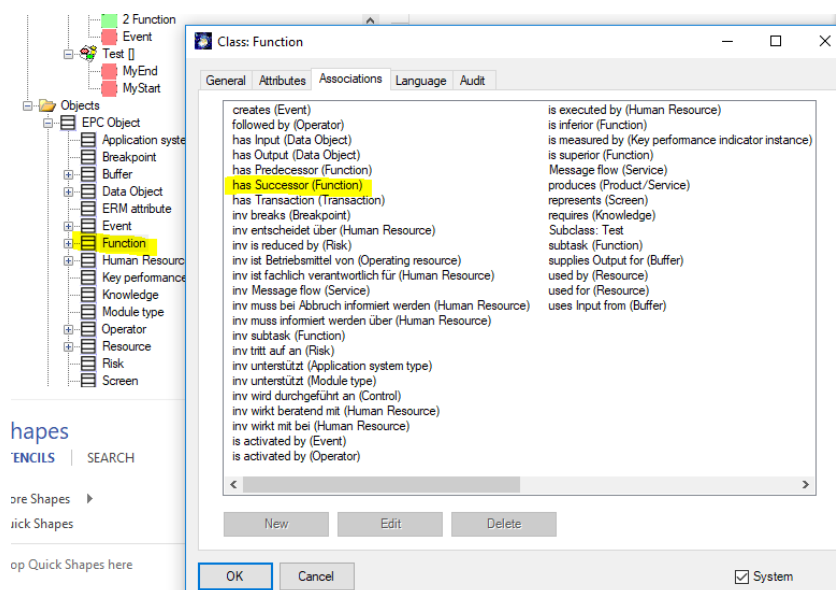


NOTE: The above descriptions of EPC's are those currently implemented in SemTalk.

3.5. Cardinalities

Users can define the number of specific associations an object can have. If an object's configuration exceeds the allowable limit, Consistency Check will create an issue and urge the user to model within the defined limit.

To set the Cardinalities, go to the SemTalk Explorer and right click on a SemTalk Class and choose Edit. Then go to the Associations tab and check the System checkbox in the bottom right corner. All pre-defined associations for the class are then displayed (in this example for the Function class).



Double click on a specific association that you want to change, such as 'has Successor'. Using the dialog box shown below, you can define how many successive Functions a Function can have.

has Successor: has Successor.56

General Language Simulation Object Flow Audit

Domain Cardinality: Min: 1 Max: 2

Range Cardinality: Min: 1 Max: 1

Comment:

Language: English

Links:

+ -

☒ Read Only

OK Cancel

Domain Cardinality sets the number of outgoing associations an object should have and Range Cardinality sets the number of incoming associations.

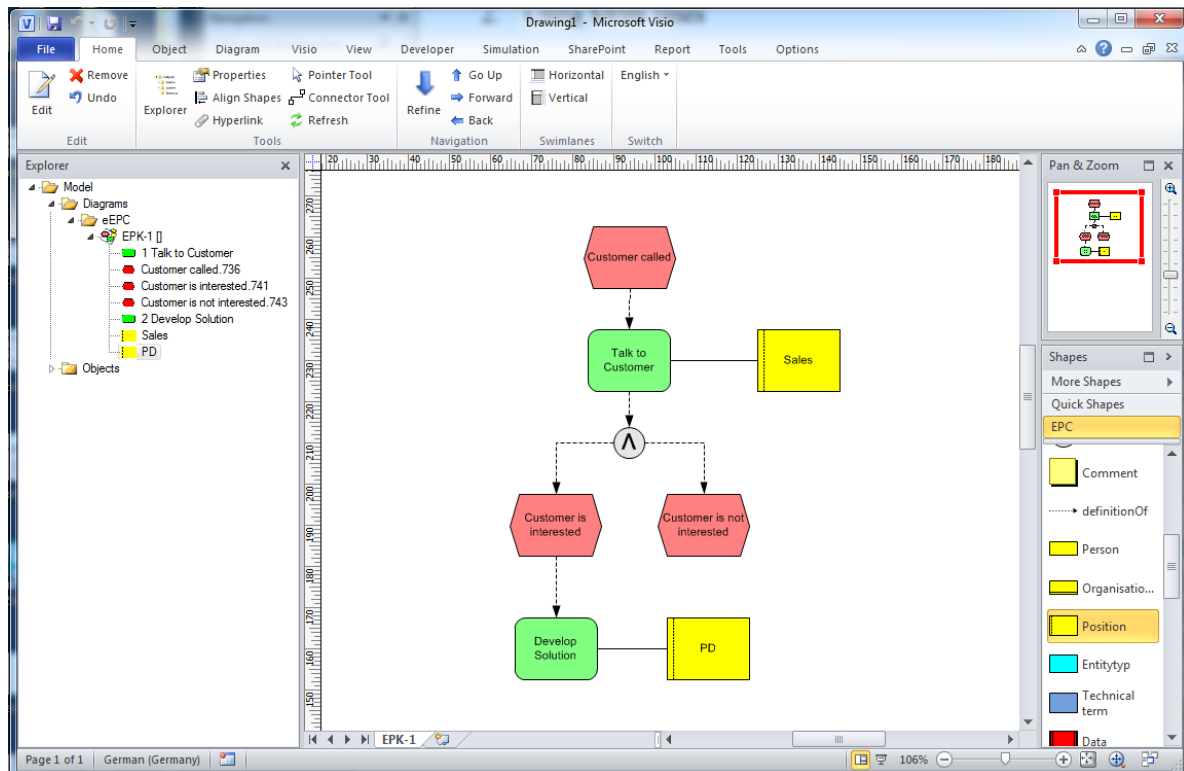
NOTE 1: If a setting is left empty, SemTalk will not check cardinality. Users only need to change the settings type they require. All other settings are left unchanged.

3.6. Adding a Human Resource to a Function:

In SemTalk you can assign a HumResource (Position, an Organizational Unit or a Person) to a Function.

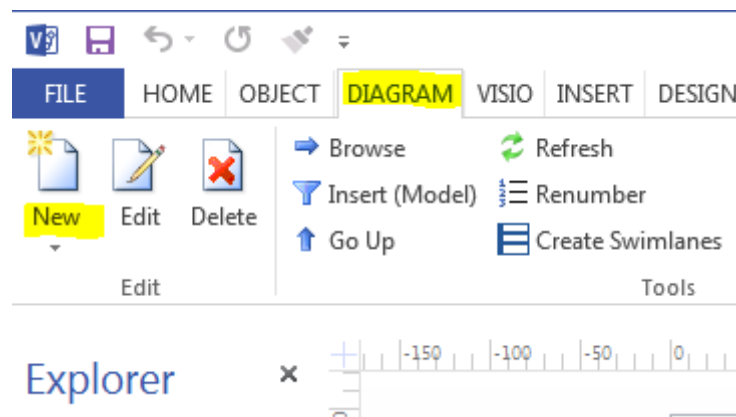
3.6.1. Adding Person, Position or Organizational Unit Shapes

Add a Person, Position or Organizational Unit Shapes to the process and then connect them with the Function using the “executes” connector or the toolbar connector tool. The disadvantage of adding extra shapes to a diagram is that diagrams often get overloaded with symbols and become difficult to read. However, adding shapes is recommended when the control-flow is more important than the exchange between actors.

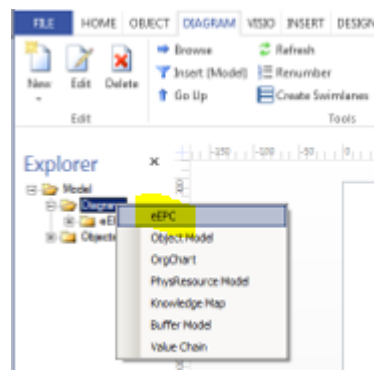


3.6.2. Create a New eEPC Diagram

Using your Diagram tab ribbon menu, create a new eEPC diagram using 'Diagram – New':



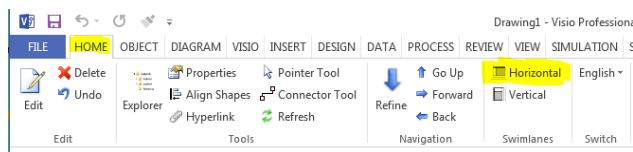
Or right mouse clicking on the Diagram and select eEPC or right click on the eEPC in your Explorer and select New:



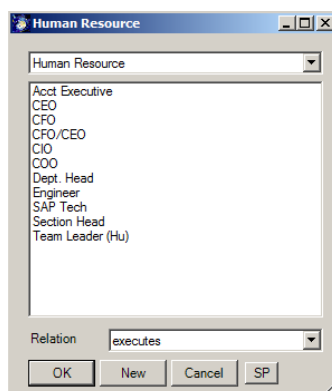
A new Visio Page of diagram class “eEPC” will open. You can rename that page directly by clicking on the default name found at the bottom of the Diagram , by right mouse clicking on the blank background of the Diagram and selecting Edit or by right clicking on the name in the Explorer and selecting Edit. Use the "Edit" command to modify existing diagrams and the "Remove" command to delete the selected diagram.

3.6.3. Using Swimlanes

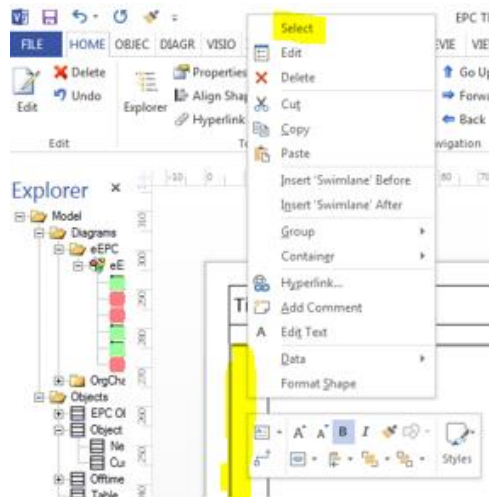
In your Home tab, select a Horizontal or Vertical Swimlane from the ribbon menu.



When the Swimlane appears, click on the label you want to name, If you have already modeled your OrgChart, you can right mouse click on the label and use the Select command to assign a HumResource (e.g. Position, OrgUnit or Person). If the HumResource is not listed, select the New button in the dialog and add your new HumResource along with its class type (e.g. Position, OrgUnit or Person).



If you click to select your Swimlane title, you can assign new People, Positions or OrgUnits or you can assign an existing Person, Position or OrgUnit using the right mouse Select Command.



If you move a Function to a Swimlane, SemTalk detects that a HumanResource has been assigned via the Swimlane. The Swimlane role is automatically assigned to the Function.

If you select the Swimlane column header, you can create new roles just by renaming the Swimlane. Click on the Swimlane column header and type the new name. Use the Select option to choose existing roles or to edit the object.

3.7. Adding Other EPC information

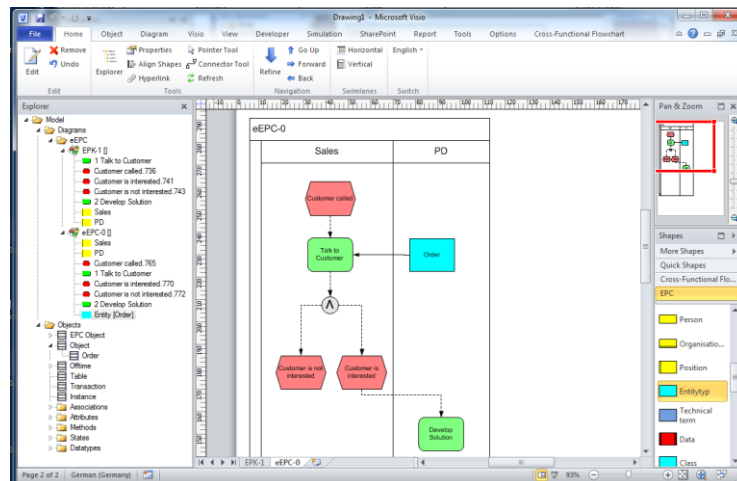
Functions, Inputs and Outputs of are further specified using the following shapes from the EPC stencil:

- "Entity",
- "Technical term",
- "Class",
- "Data" (from Data Objects) or
- "Package".

Add the shape to the drawing space and click on the default name to rename your new object or, to select an existing name from a list of previously modeled objects or use the right mouse click "Select" option.

If you want to select a name from the list of existing business objects, Edit the shape and select the pull-down menu in "Name" field and select the name from the pull-down list.

An eEPC diagram using the elements mentioned above might look like:



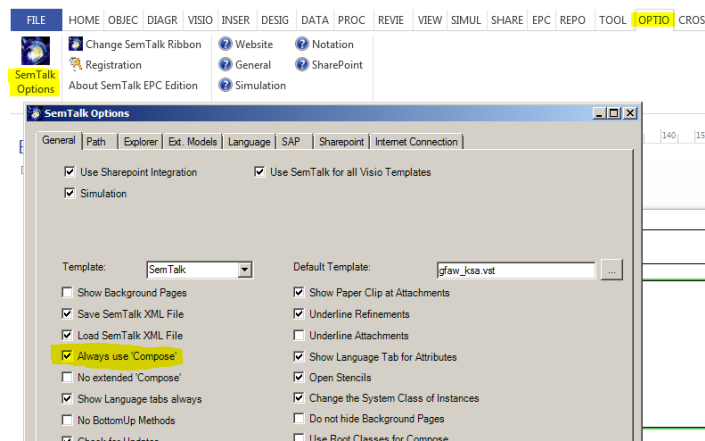
3.8. Using Object-Oriented Process Modeling with EPCs

SemTalk is designed to create semantically consistent models built on reusable object names. The Compose feature allows you to create object names based on Classes (nouns) and Methods (verbs) names. This object naming tool forms the basis of an object-oriented controlled vocabulary to represent your objects. Since Class and Method names are classes, if either the Class or the Method name is changed, those changes will then be propagated throughout your model. Note that Methods (as well as Attributes and States) can be inherited from super classes.

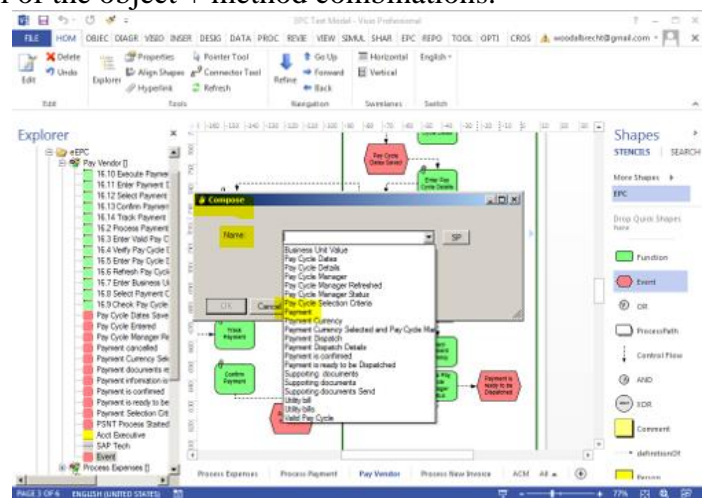
Classes are business objects related to your Function or Event. If a class has already been created, you can reuse existing classes when creating new Functions/Events. If the class is new, after you create it, the class will be available when describing future Functions or Events. For example, you will only need to create “invoice” once as a class object. Because “invoice” is available on the class pick list, it is more likely that you or your modeling team will always use the term “invoice”. It is much less likely that inconsistent synonyms such as “bill” will be used in the future. All related objects also stay consistent such as “Create invoice” or “Mark invoice as paid”

The options **State** and **Attribute** allow you to specify which of features will be used to create the Function name. In the EPC methodology, only Methods are relevant for Functions and only States are relevant for Events.

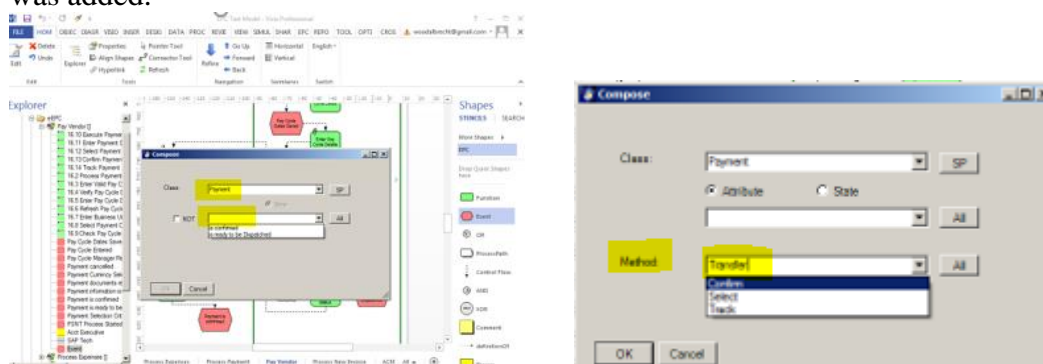
Turn on the Compose function in SemTalk Options to get the Compose dialog every time a new function or event is dropped onto the drawing space. “Compose” can be selected from the Object pull-down menu as well. When you drag and drop a new Event or Function object onto your diagram or if you right-click on your new object and select the “Compose” option.



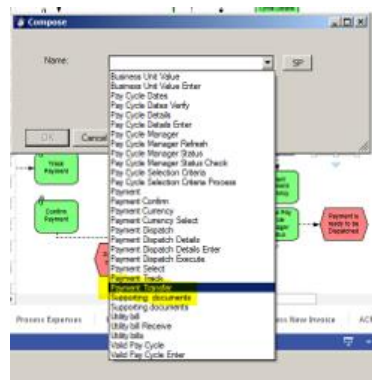
After opening a Compose dialog, a select box will list the names of all of the existing objects and the names of all of the object + method combinations.



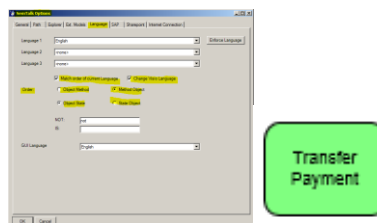
If your desired object + method combination is already available, simply select the name and your dialog box will close automatically. Otherwise, select or enter the object name such as “Payment”. A new dialog box will open for you to either select the desired Method (verb) from a pull-down list or you can enter a new Method. In this example the Method ‘transfer’ was added.



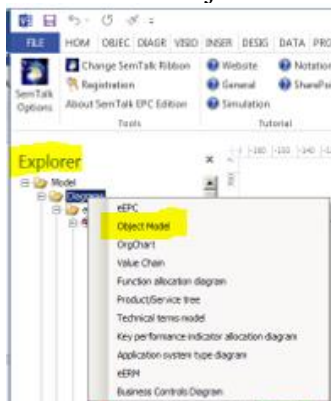
If Classes and Methods do not already exist in the database, SemTalk will add them to the database. In our example the class named “Payment” is now associated with the Method “Transfer”. Now if we want to add another Transfer Payment object into our model, it is available in the picklist as Payment Transfer.



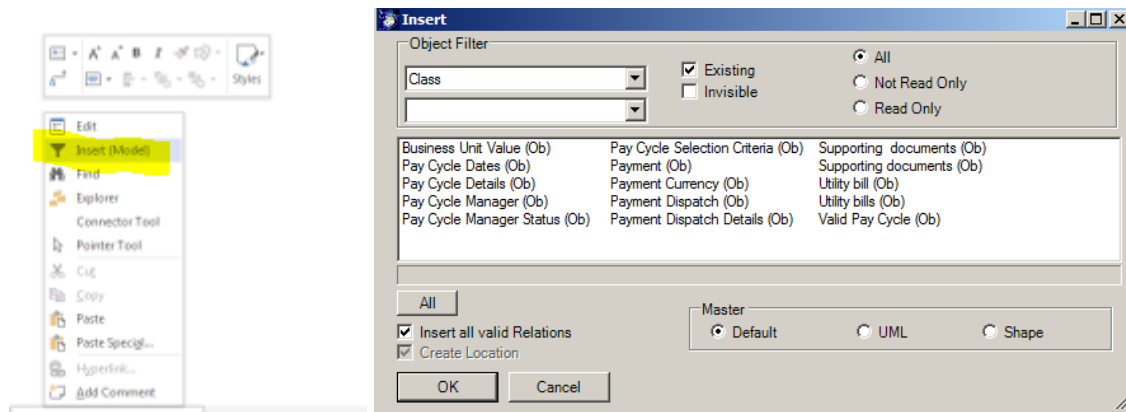
The correct layout for the Method-Object is defined in the Language tab of SemTalk Options. The order of how the name of the Function will be generated is language specific. For example, „Order Enter” is German word order and “Enter Order” is English word order. You can change the term order as a general setting in the SemTalk options dialog. For English you will use “Method Object” and your object will appear as Transfer Payment in your eEPC diagram.



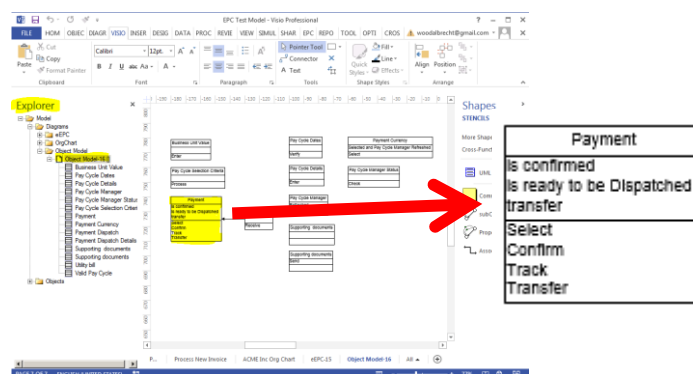
Information Objects and Method/State Objects can be managed in Object Model Diagrams.



If you create an Object Model Diagram and right mouse click on the diagram and select Insert, objects that you have created will appear.



Inserted objects are shown with all associated Methods and States:



SemTalk ensures consistency between objects created in the eEPC model and objects in the Object Model. If you rename a Class and/or Method, all Functions that contain renamed elements will be updated.

We recommend object-oriented process modeling, especially for large projects. Start by first defining the most important business objects in your organization (key terms such as Invoice and Payment) and then build a catalog of associated Methods (commonly used verbs such as Send and Create). This structured vocabulary helps to build consistent, easy to understand process models.

If you are going to use the same business objects in multiple projects, we recommend storing such objects in Libraries in SharePoint or by saving them as separated files so that everyone in the organization is using the same consistent terminology.

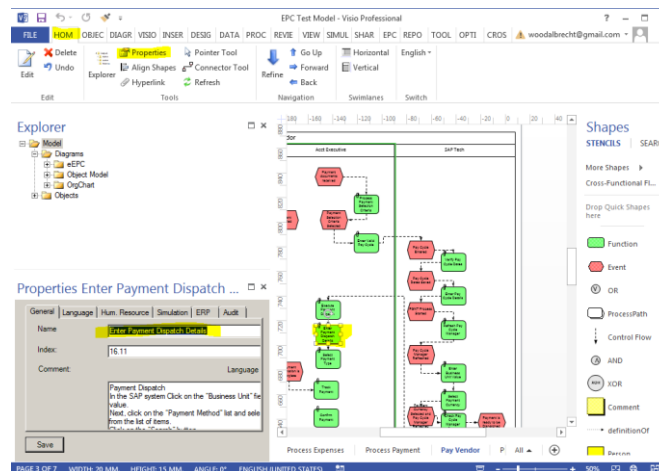
3.9. Editing process elements

You can edit objects in your diagram:

1. By double clicking,
2. Right Click “Edit”,
3. Select & Menu “Object->Edit”,
4. Finding it in the explorer as a child of “Diagrams->EPC->X” or by
5. Finding it in the explorer as a child of “Objects->X”.

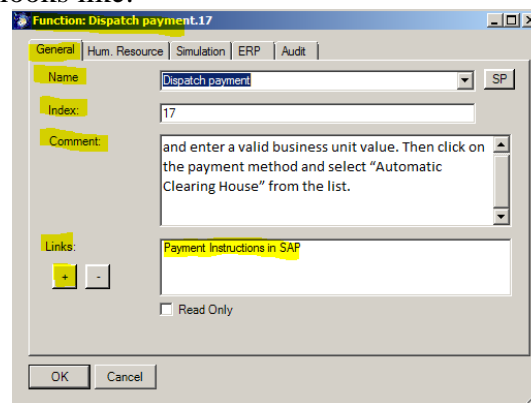
If you just want to rename the object, you can select it and type in the new name.

You may also use the Properties Window, which allows review and edit of values directly.
(Home->Properties)

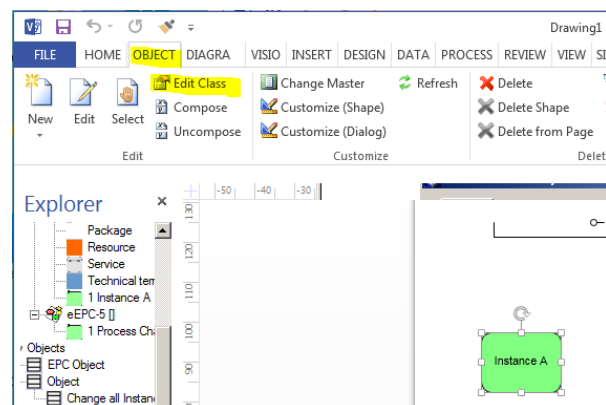


3.9.1. Edit Function Dialog

The Function Edit dialog looks like:



NOTE 1: The Edit command in an eEPC diagram changes the name of the instance of the Function. If you want to change all instances, you must edit the Class itself by editing the Class in the Object tree in your Model Explorer or by using the Edit Class command found in the Object menu.



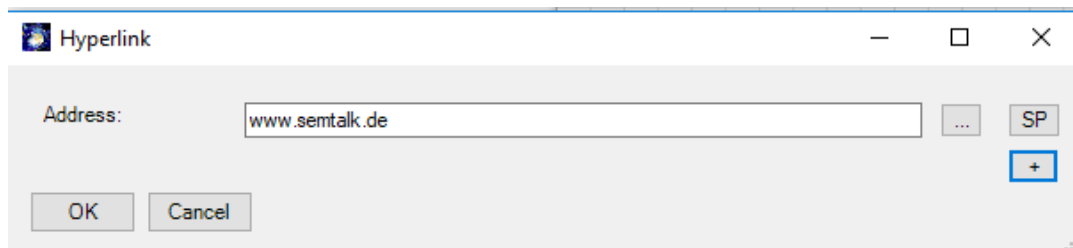
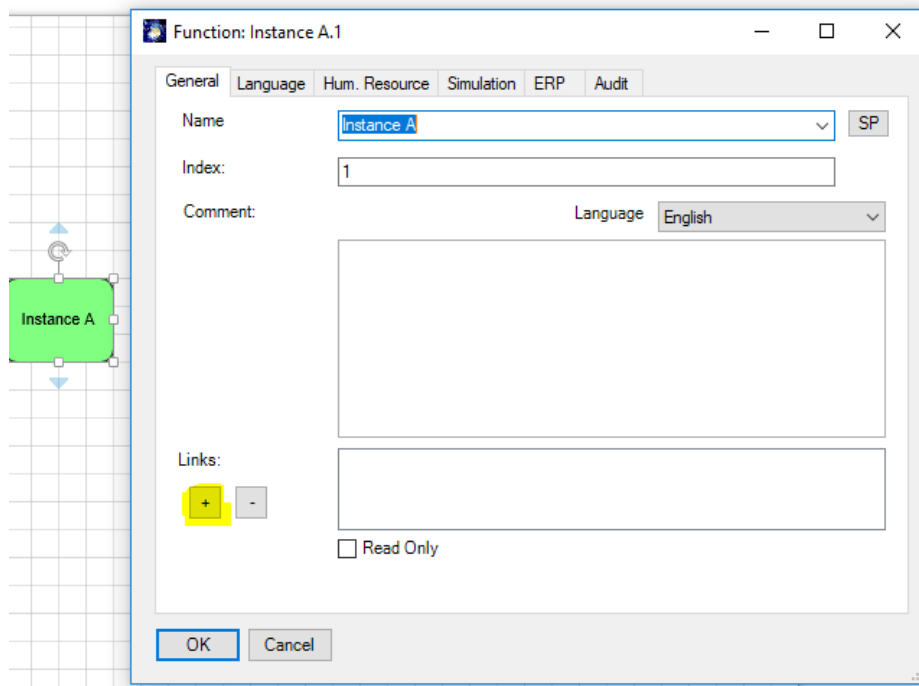
NOTE 2: In SemTalk's EPC Method implementation, the term Function Call refers to a process step. Each Function Call is an anonymous instance of its Function. e.g. *Enter*

Payment Dispatch Details is the Function and *Execute Payment Dispatch* a Function Call in a process.

3.9.2. Attachments and Visio Hyperlinks

Attachments (Hyperlinks, documents) are used to assign external information such as documents, hyperlinks or non-SemTalk Visio pages to an object.

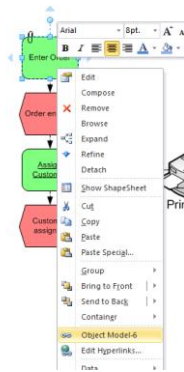
Attachments can be added by right clicking on the object and selecting Edit - General tab or by selecting Hyperlink from the ribbon Home menu. In the bottom left of the object's General tab dialog box, there is a "+" button to add attachments.



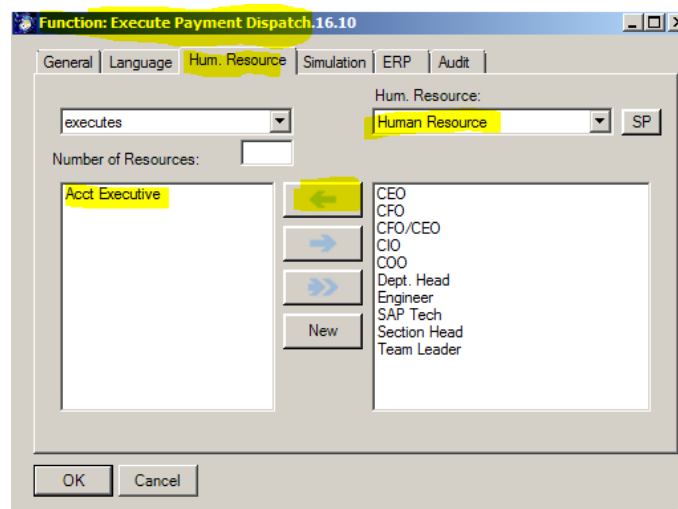
The Hyperlink dialog will pop up. In the Address text box users can directly add URLs or use the "..." button to choose a document from their local file system. The "SP" button opens the SharePoint Explorer and enables the user to select document from SharePoint libraries.

The "+" button extends the dialog by some properties. **Label** is used so that you can give your link a name that is easy for the average user to understand. **Language** marks the document for a certain model language. You may attach as many documents as you desire. Please visit the general tutorial for further information.

Navigation to links is via CTL click on the paperclip or right mouse click on the object with a hyperlink and select it from the menu:



3.9.3. Function: “Hum. Resource” Tab



“Human Resources” can be assigned to Functions using the “Hum. Resource” tab. Human Resources are the People, Roles or OrgUnits that actually execute the Function. The left-hand of the list box shows currently assigned resources and the right-hand list box shows the list of all available human resources.

Use the arrow buttons to add / remove resources. Double clicking on the list boxes allows you to edit the resource.

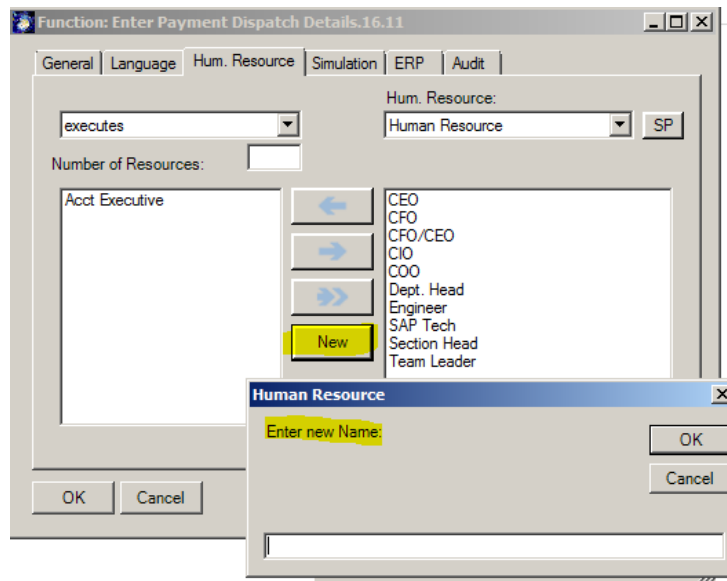
The right combo box lists defined “Human Resources”. This list can be filtered by class.

The left combo box with “executes” allows users to specify certain types of execution such as “controls” or “supervised by”.¹

Using the “New” button you can add new Human Resource Instances and new Human Resource Classes.

The new Instance will automatically be linked to the Class selected in the combo box.

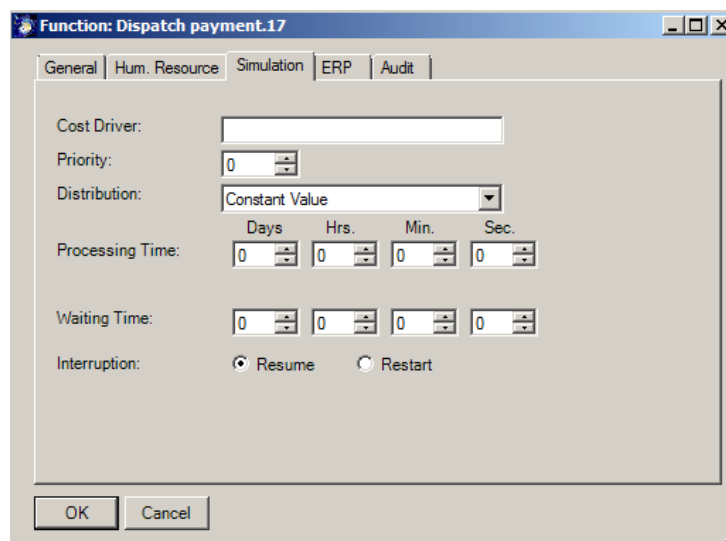
¹ These could be defined as subclasses of the relation “executes”



You can visualize and Edit all existing Resources in the Explorer as child nodes of “Human Resource”.

Please look at chapter 3.6 to see the other ways of adding Human Resources.

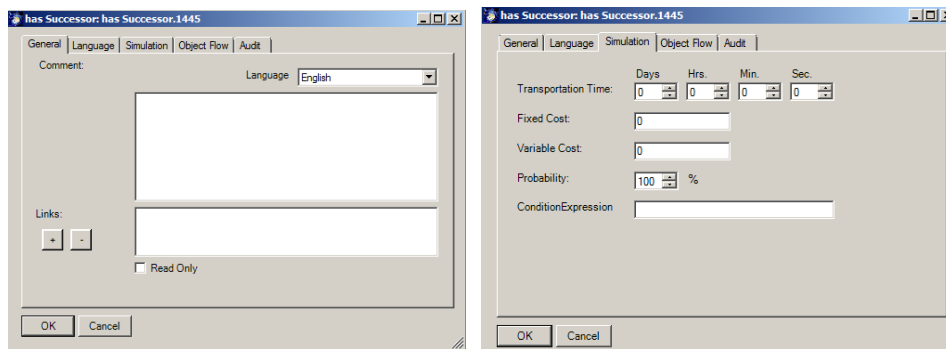
3.9.4. Function: “Simulation” Tab



Simulation allow you to set values for the attributes that are relevant in Simulation, Reports and interfaces (e.g. work plan report), MS-Project etc. “Processing Time” is particularly important, especially when determining process performance. Please see the Simulation Tutorial for further information.

3.9.5. Simulation Tab in Process Control Flow Dialog

If you double-click on the Control flow connector between Functions, the following dialog will appear.



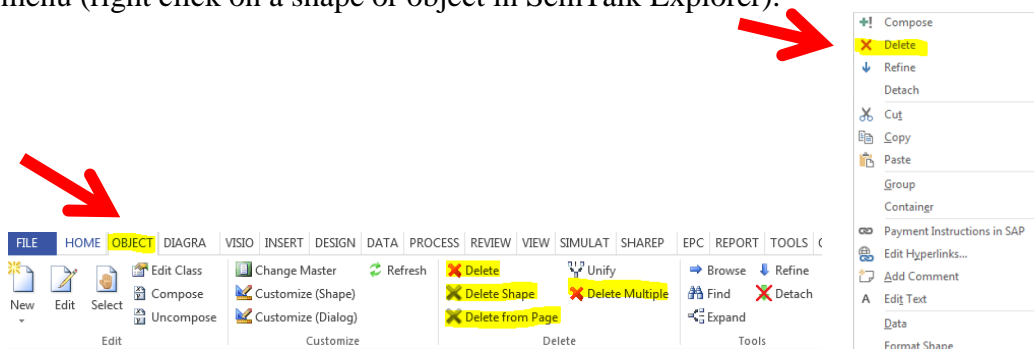
The Control Flow “Simulation” tab allows Transportation time, Fixed Cost, Variable Cost and Probability to be specified.

3.10. Deleting Process Elements

When using SemTalk’s object-oriented modeling approach, there are different ways to delete process elements. Depending on the process element type being deleted, different results may occur.

Before discussing the delete functionality in detail, it is important to stress that SemTalk is only able to perform a single Undo. Only the last action can be restored. Therefore, users should use extreme caution when deleting objects.

In the Object tab in Visio ribbon, users will find multiple options to delete a process element. The DEL key on the keyboard can be used also as well as the Delete option in the context menu (right click on a shape or object in SemTalk Explorer).



1. Delete an object from the process document (including shape and SemTalk object)

If the “Delete” button in the Object ribbon or the Delete right click in the context menu is used, an object will be deleted from the entire model! (An object must first be selected before it can be deleted.) The associated shapes and the SemTalk object will be removed from all diagrams and from the SemTalk object tree. SemTalk will prompt a confirmation dialog before performing the action.

For example, if a user has assigned the role “Team Leader” on different diagrams and then decides to delete that role, it is sufficient to select the “Team Leader” shape and then select Delete from the Object ribbon or use the context menu to delete “Team Leader” to completely delete the object from the process model.

2. Delete shape from a Diagram

Sometimes users may want to keep an Object in their model but just delete it from a single diagram. This can be done by using the “Delete Shape” button found in the Object ribbon or the DEL key. The selected shape will be removed but the SemTalk object will still exist. Exceptions are the Function and the Event object as these are not reusable instances. If a Function or an Event is deleted from a page the SemTalk instance will be gone as well. The class which holds the instances however will be preserved. All Function or Event instances have classes with the same name. Deleting those classes is covered in point 4.

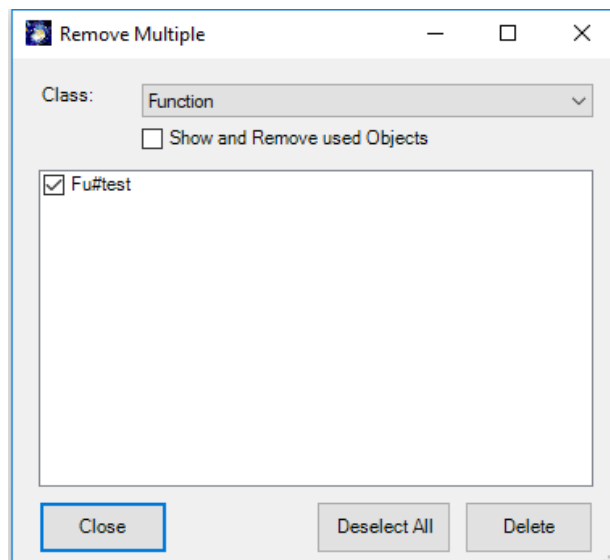
3. Delete multiple shapes from the process page

When the delete action is desired for all object of a specific type on a single page the “Delete from page” button can be used. Following the example from before all “Team Leader” shapes would be deleted from the diagram where the object is selected but the Object will still exist as SemTalk object and as an Object on all of the other diagrams where it is used. As in the above example, Function and Event instances have classes with the same name. Deleting classes is covered in point 4.

4. Delete Multiple Objects

The “Delete Multiple” button allows users to delete multiple objects at once. It also shows all unused objects that are available for deletion. In the following screenshot, the Function Class is selected and the user gets a list of unused Function classes, which can be selected and deleted by using the “Delete” button on the bottom right. If “Show and Remove used Objects” is checked, all used Functions will be displayed as well.

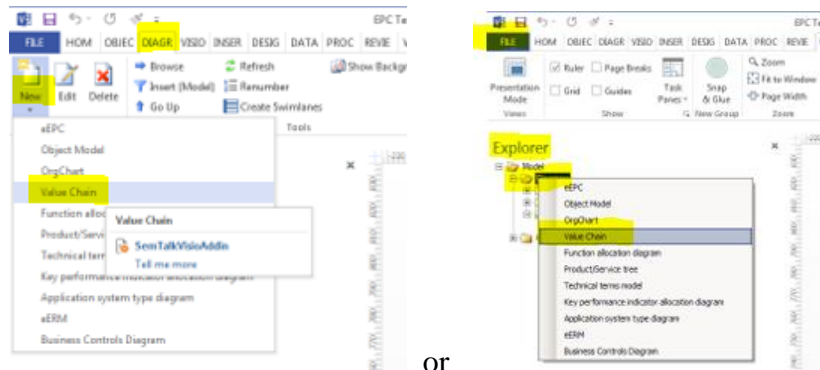
In the Class pull-down list, all SemTalk classes are selectable. Human resources, systems and all other EPC information can be deleted with this dialog as well.



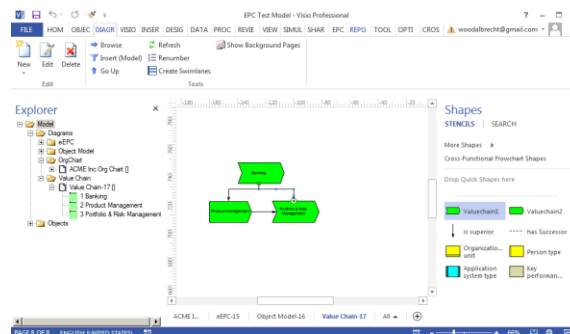
4. Value Chains

Using a Value Chain diagram (Right click on the Diagram Folder in your Explorer or use the “Diagram – New - Value Chain” pull-down menu option) processes can be described which are directly creating value for your company. Value Chain Elements (Functions) have “is superior of” and “has Successor” connectors.

Create a "Value Chain" diagram of type by selecting "Diagram - New - Value Chain Diagram" or right click on the Diagram Folder in your Model Explorer. Then add value chain elements.



or



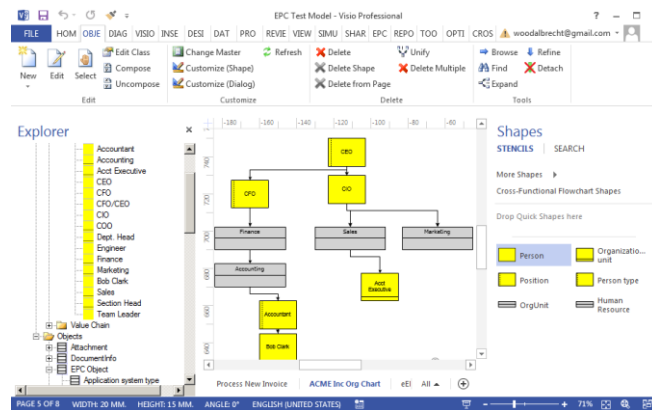
Value Chains do not contain Events or other symbols. This type of diagram is intended to be used as a general overview of the process landscape.

Each Function may be refined by another Value Chain or an EPC diagram. EPC diagrams must be created before they can be attached to Value Chain elements. Value Chain elements that have attached diagrams are underlined. They also have a Visio Hyperlink in the context menu for navigation.

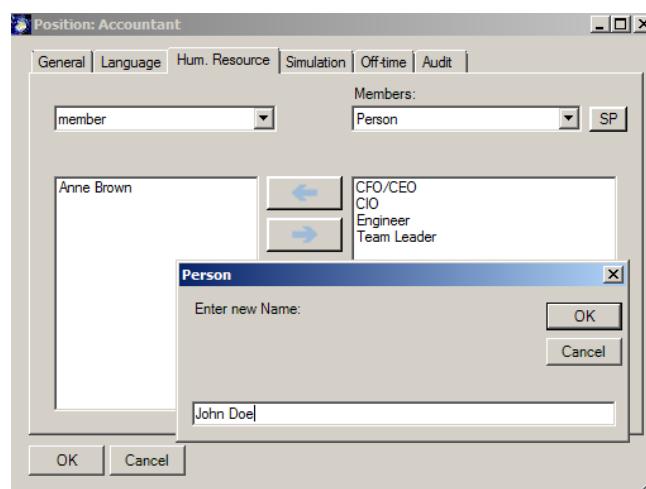
5. Organizational Charts (OrgCharts)

Create a new Org Charts by right clicking on the Diagram Folder in your Explorer and selecting OrgChart or use the "Diagram – New – OrgChart pull-down menu. OrgCharts are used to graphically describe the organizational structure of your company. Add new elements to your OrgChart by dragging and dropping Org Unit, Position or HumanResource shapes from your Stencil. Connect them with a "superior of" connector.

If you have already modeled organizational elements in your EPC diagrams or Swimlanes, these elements can be inserted into your OrgChart using the right mouse click Insert command.



Org Unit or Position can be edited to add Persons to the object.

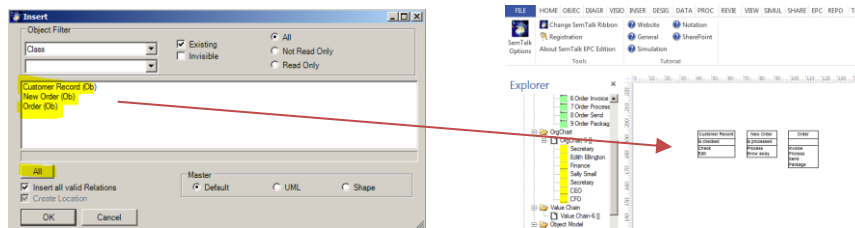


The person can be edited directly by double clicking on the name in the list. Organizational units are resources with similar Measures as other resources such as fixed costs, variable costs and capacity.

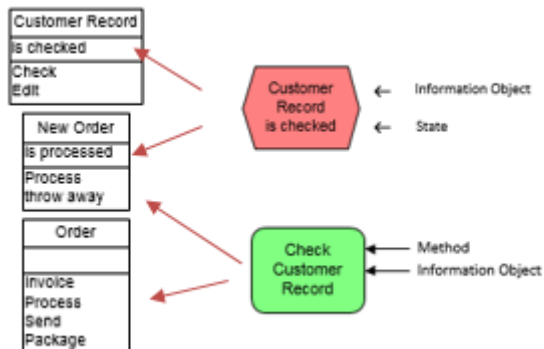
6. Class Diagrams

SemTalk objects are object-oriented so that objects can be easily managed, edited and so that they can have attributes that can be inherited by other objects of the same type. As you model in SemTalk, especially when using Compose, information entered in EPC diagrams is automatically stored as information Objects.

Create a new Object Model by right mouse clicking in your Explorer on the Diagram Folder and selecting Object Model or use the “Diagram – New – Object Model pull-down menu. Right mouse click on your new Object Model diagram and select Insert - All.

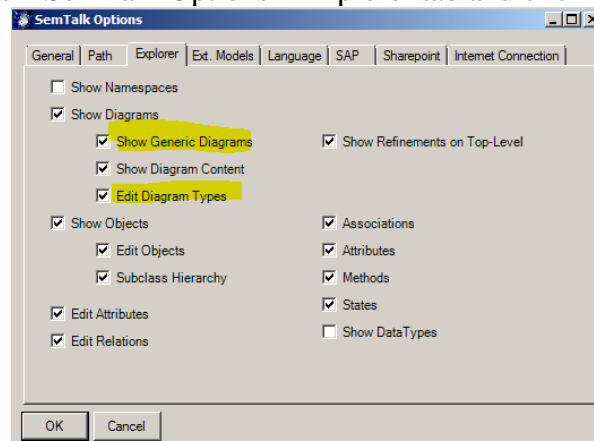


Everything that has been modeled is now entered into a UML view diagram that shows the information Objects and the Methods and/ or States associated with those objects. These objects can now be managed and edited in the Object Model.

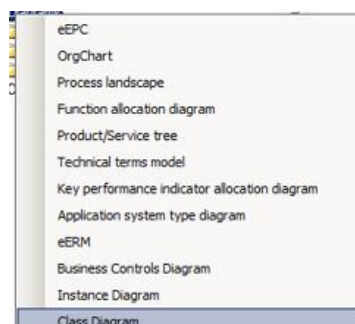


7. Physical Resources

If you would like to add physical resources to your model, you will have to create a new Class Diagram. Go to Options – SemTalk Options – Explorer tab and click on

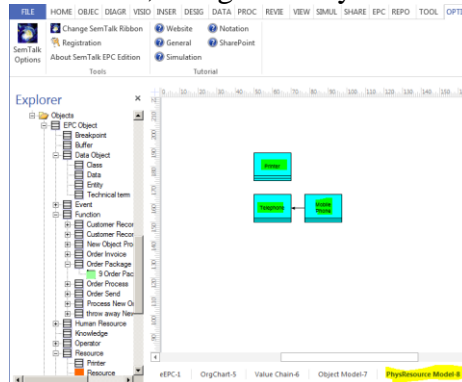


Now go to your Model Explorer, right mouse click on the Diagrams folder and select Class Diagram.



Rename your new Class Diagram PhysResources. We will now create a few Resources to add to our diagram. In your Explorer, expand Objects and EPC Objects. There you will see the class Resource. Right mouse-click on the UML Resource object and select New Subclass. Call this subclass Telephone. Right mouse-click on Telephone and create another Subclass and call it Mobile Phone. Go back to your Resource object and create a second Resource Subclass and call it Printer.

Right mouse-click on your new PhysResource diagram and Insert – All. The Resource objects created in your explorer will be inserted, along with any defined class structures.



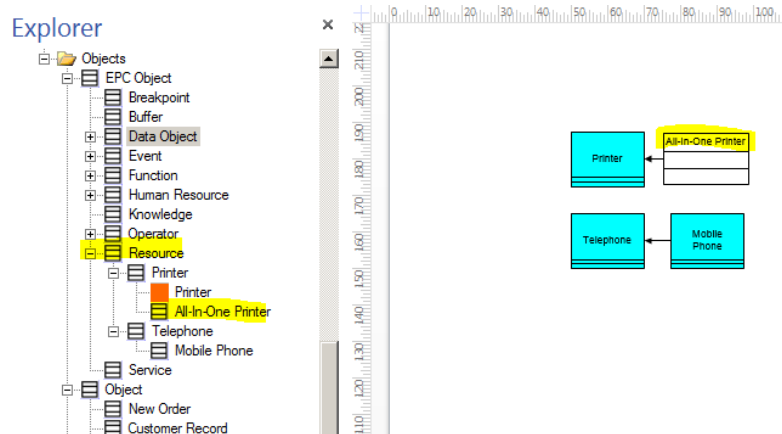
Drag a Printer Resource shape from your Explorer onto your process diagram. SemTalk automatically creates a Printer Instance in your EPC diagram.

Instead of creating classes as you model, you can also use predefined resources using top down approach in your PhysResource Model diagram or by adding subclasses and instances in your Explorer. Once modeled, PhysResources can be connected using the subclass or superclass association so that attributes are inherited by their subclasses.

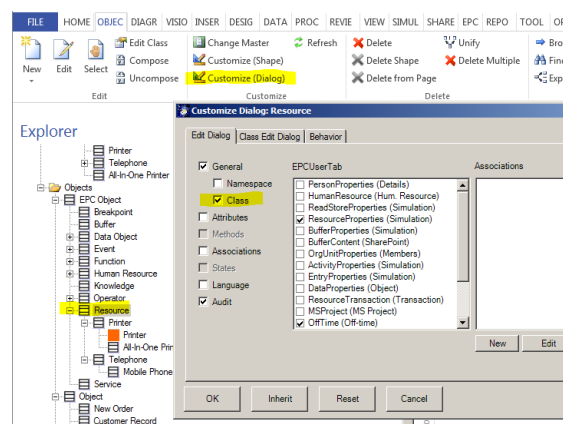
In your PhysResource diagram create a new 'All-In-One Printer' subclasses. Using the Auto-Connect function click on the UML icon and select Subclass from the pull-down menu in the dialog box. Now double-click on the new UML object and name it 'All-In-One Printer'.

New Resources can also be added by dragging and dropping a "UML Class" shape onto your PhysResource diagram. Resource classes are connected using the Subclass, Superclass and Property connectors. The Property connector is used to show a consists of relationship between an object and its component parts. For example, a 'Tire' is a 'Property' of a 'Car'.

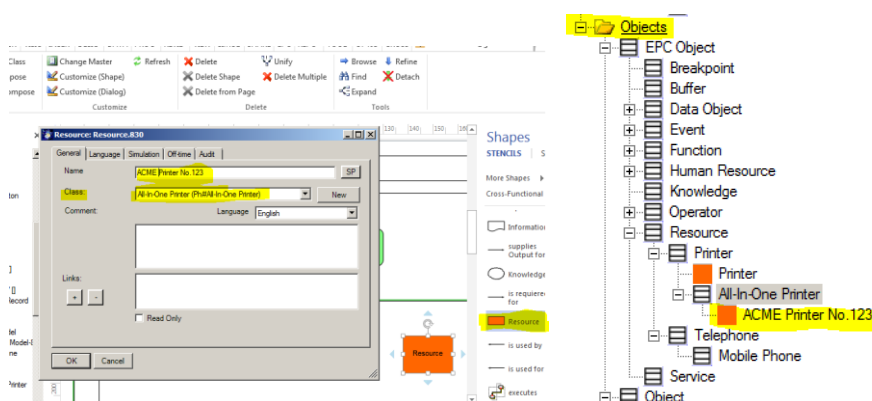
A special behavior of each of the class diagrams is that every class is automatically added as a subclass of its root class. This is also visible in your Explorer. Whatever objects you model in your PhysResource Model diagram will automatically appear as Resource subclasses.



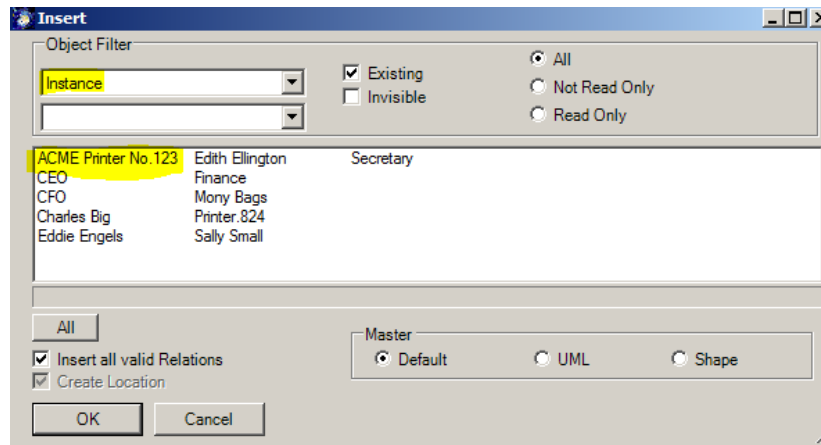
NOTE: Resources are objects which are required to execute Functions. Functions can only be executed if the resource has available capacity. There are basically two kinds of resources: Concrete physical resources such as printers and Human Resources such as People & Org Units.



Drag a Resource from your Stencil. Double-click on the new Resource to create a new instance. Select 'All-In-One Printer' as the Class and 'ACME Printer No.123' and the instance name.

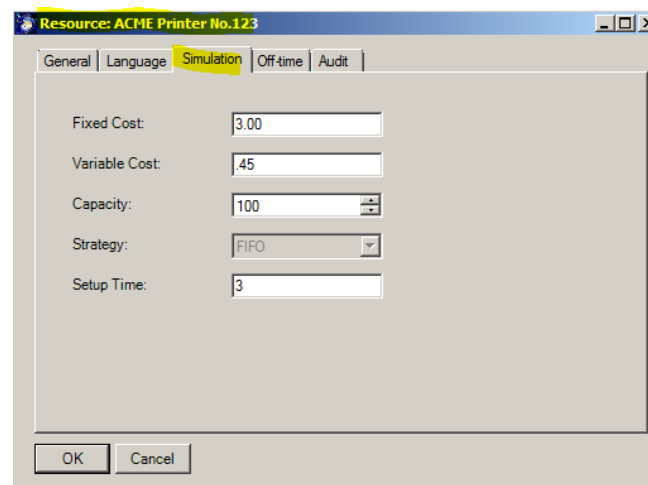


Now the PhysResource instance ACME Printer No.123 will have all of the attributes of All-In-One Printers and it is available as an instance to be added in other EPC diagrams using the Insert command.



The Measures Tab of PhysResource has fields that are mainly used mainly when running simulations. Variable Costs depend on the length of time the resource is used. Fixed Cost is a cost that occurs each time the resource is accessed.

For PhysResources it makes sense to have a class model where you can specify all the types of resources you use in your model and assign shapes how to display them.



Class models can be created for every object type. In order to take full advantage of object-oriented modeling, it is best to define attributes on a common superclass rather than defining them in classes created from Visio masters.

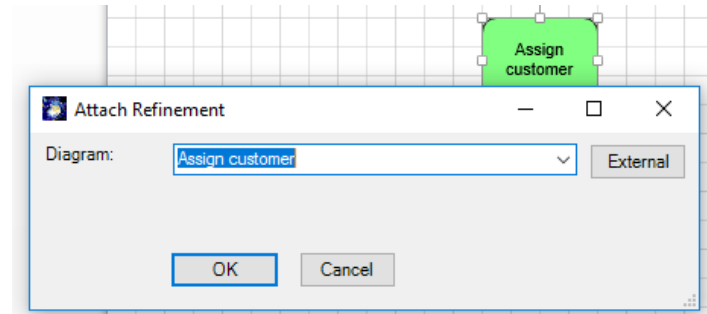
NOTE: You may also depict subclasses of an activity by creating special symbols or by changing the layout of system shapes.

8. Refinements

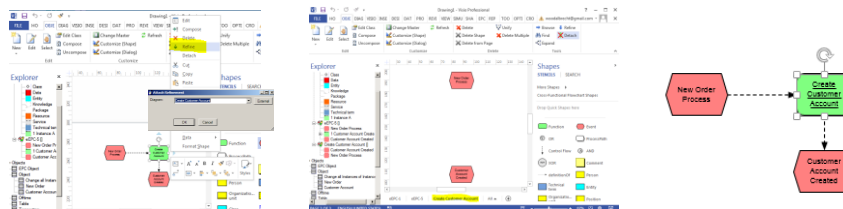
The EPC method implemented in SemTalk Visio is broadly compatible with given EPC methodology standards. However, process references to Refinements have been solved differently. SemTalk does not have a special symbol to denote that there is a sub-process/refinement. Even though there is no designated symbol, Functions can be refined by attaching an EPC diagram. In the SemTalk version, refined Functions are drawn with underlined object names similar to a hyperlink in a browser. If the standard process path shape is required, users

may select that shape for a specific function call. Then each sub-process will automatically get copies of the start and end Events that have been inherited from the refined Function.

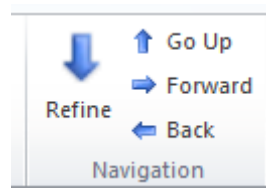
Right Click on “Assign Customer” and select “Refine”. A dialog pops up asking for the name of the sub-process:



A new eEPC diagram will open with its attached start and end Events:

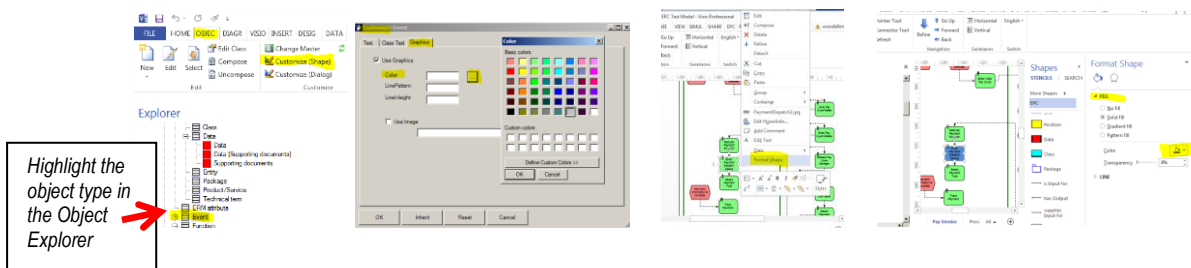


You can see in the Explorer the addition of a new process as a child node of “eEPC- #”. In the shown example “eEPC.X” “Create Customer Account” is now underlined to inform you that this Function has a refinement. Any time you select “Refine” you open the refinement. Navigation is also available on the “Home” tab. It allow to go from the refinement to the refined process.



NOTE: If you use the option “External” on the refine dialog, you can assign a process from a different model. In this case the refinement works like a hyperlink to the other model. But using this method you cannot connect entry and exit points.

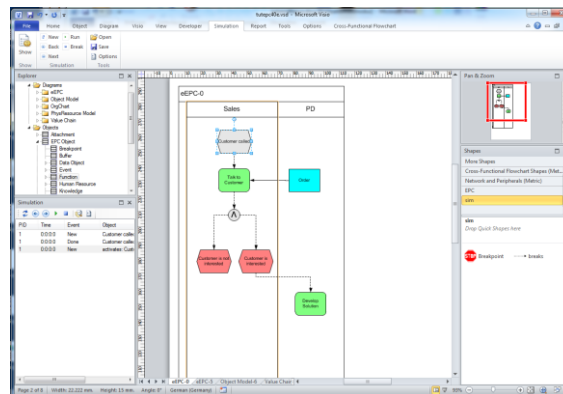
9. Customizing Colors



You have the option to change the color of shape types without touching Visio Master shapes. Change the color of a Function, OrgUnit or Event type by selecting the Object type in your Model Explorer (single click) and selecting Customize Shape in the Object menu. Go to the Graphics tab and select the color of your choice. Individual objects can be changed by clicking on the object and selecting Format Shape.

10. Simulation

Simulation is available for SemTalk EPC Edition. Simulation allows testing the logical behavior of your process to identify behaviors such as possible bottlenecks or modeling errors. Using colored Petri-Nets you can investigate your process in a dynamic environment with multiple inputs processed in parallel. Due to limits in EPC semantics, SemTalk's simulation in eEPC has some limitations compared to its capabilities in other methodologies. For example, you are allowed to place multiple tokens, each having its own color, on one event. Due to methodological constraints, you cannot place tokens with the same color on multiple events. Please refer to the SemTalk Simulation Tutorial for details.



11. Distributed Modeling

An important feature of SemTalk is its ability to structure and decompose models so that SemTalk distributed modeling is possible. Multiple users use shared reference models within the same, or in unrelated modeling projects. Model information is available for continual updates and editing by all modelers.

Reference models are especially well-suited for class models (e.g. Object Model diagrams, OrgCharts and Applications) since the same objects are often used throughout the organization.

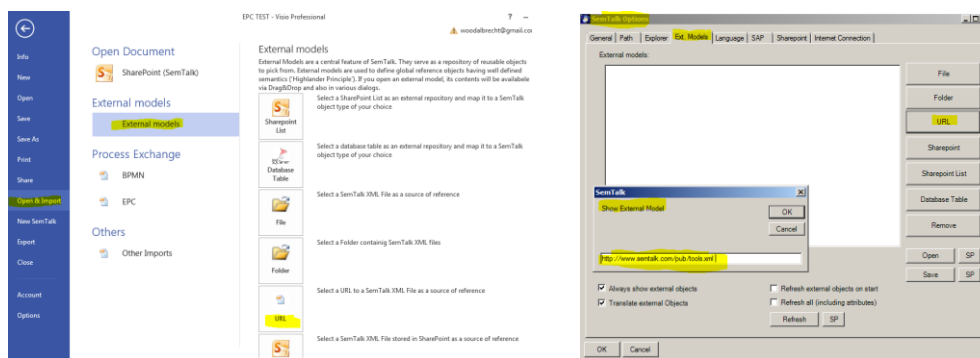
SemTalk objects can be joined and/or combined based on two different techniques:

1. Global unique names - URNs (Uniform Resource Names) are a combination of name and namespace. The same, unambiguous name is used in different models to communicate the same concept. Models are merged based on this unique name.

2. References between objects from different files. An object with an external reference has a reference to a source from which it is to be updated. References are based on fixed path names. Referenced model that are HTML pages should not be moved or renamed so that the reference is not lost. Such reference models should be on the Internet or Extranet.

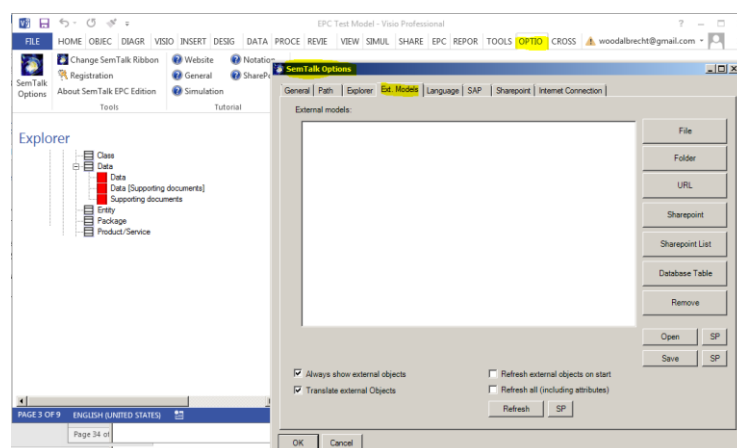
Use of external objects requires loading an external reference model (using File -> Open & Import -> External models). When loading an external model, the XML file of the external model is used. External objects are greyed out in the Explorer. Right-click "Import" from the tree, or "Object -> Import" is used to insert the shown objects into the current model. "HTML" opens any existing HTML representation of the model so that you can look at it before importing it again.

Referenced objects cannot be renamed. Remove the reference by deleting the text in the "Reference" field. The class "Search" in the picture has a URL, the file from which the object has come. This example is an ITIL reference model. As an example, you can use the demo model from our server <http://www.semtalk.com/pub/tools.xml> (File -> Open & Import -> External URL, and then enter the link.)



The most efficient way to share models and modeling data is to use external SemTalk models and to take advantage of SemTalk's SharePoint integration. Besides SemTalk files, ontologies in the Semantic Web Format OWL can be used for business object models.

You can use multiple external models simultaneously and save them to your file/template. The referenced models automatically display when you open your models. Showing multiple external models is possible using the "Options" dialog from the options in the SemTalk Options menu.



Objects from external models can be easily inserted or referenced by drag and drop. Many SemTalk dialogs such as Insert, Expand or Refine provide external objects automatically when you select “Always show external objects” in Options->SemTalk Options->Ext. Models”.

Note:

A reference model located in the Internet is similar to open as a local reference model (File -> Open & Import -> External URL) . Just enter the web address. If you are connected to the Internet, try displaying an External Model by loading the following URL:

<http://www.semtalk.com/models/biztalk.xml>

Update external objects using the menu “Refresh” to replicate the values from the external model. The entire chart (with all external objects) is updated via the main menu Diagram -> Update.

Note:

If references were created to external models, they are replicated by SemTalk .

A detailed discussion of distributed modeling with SemTalk see

<http://www.semtalk.com/pub/richard.ernst.pdf>

12. XPDL Export

The XML Process Definition Language (XPDL) has its origin in the text-based workflow exchange format of the Workflow Management Coalition (WfMC Interface 1). WfMC was created to:

- Allow tools to exchange process models, and
- Formatted to exchange Process Definitions between
 - Components within Workflow/BPM Products
 - Different BPM/Workflow Products
 - Process Modelling/ Simulation tools and BPM/Workflow Products

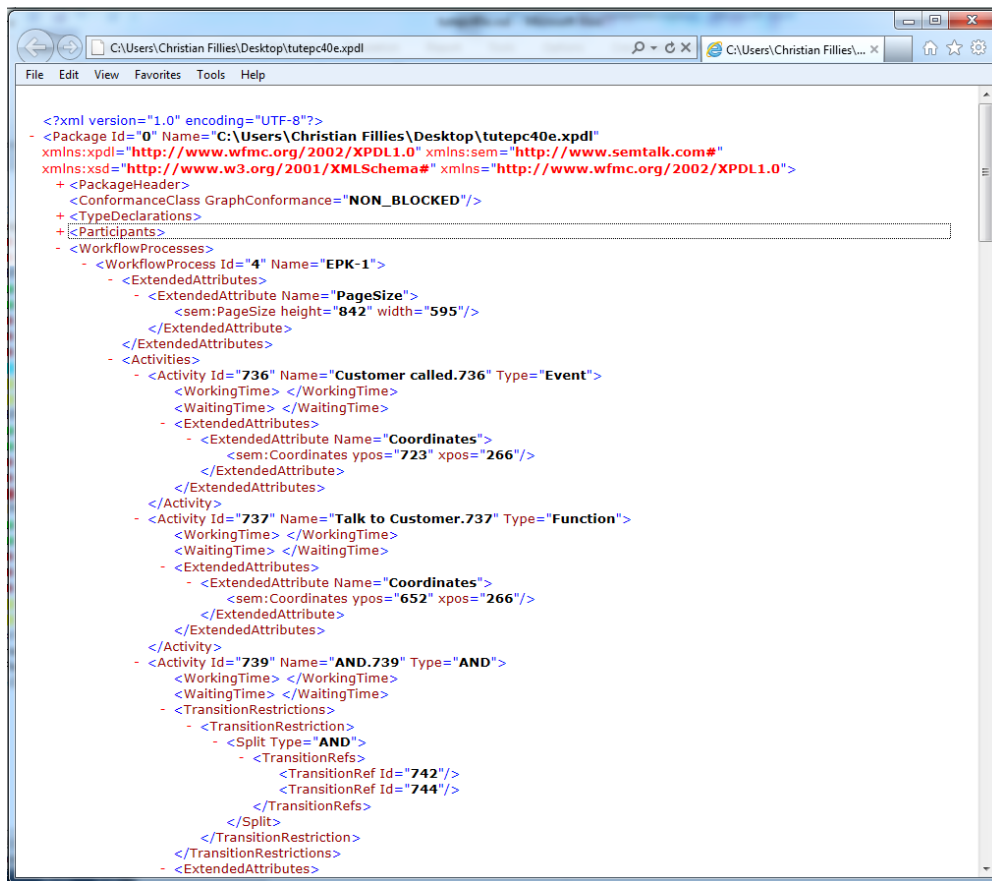
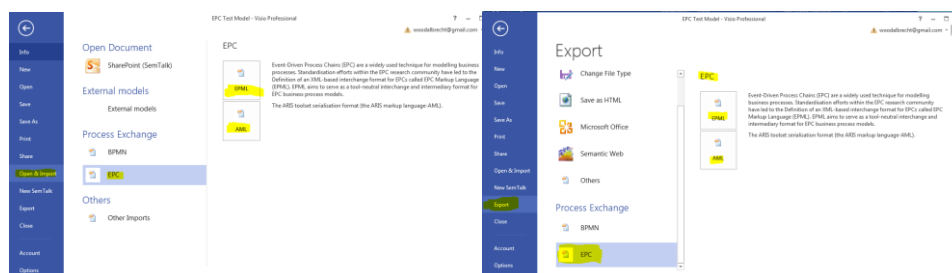


Figure 1: XPD Export

13. Importing and Exporting of ARIS and EPML⁴

The import and export of ARIS models is possible using the ARIS XML format named AML or EPML.

You will find the Import/Export interfaces in your model **File menu**.



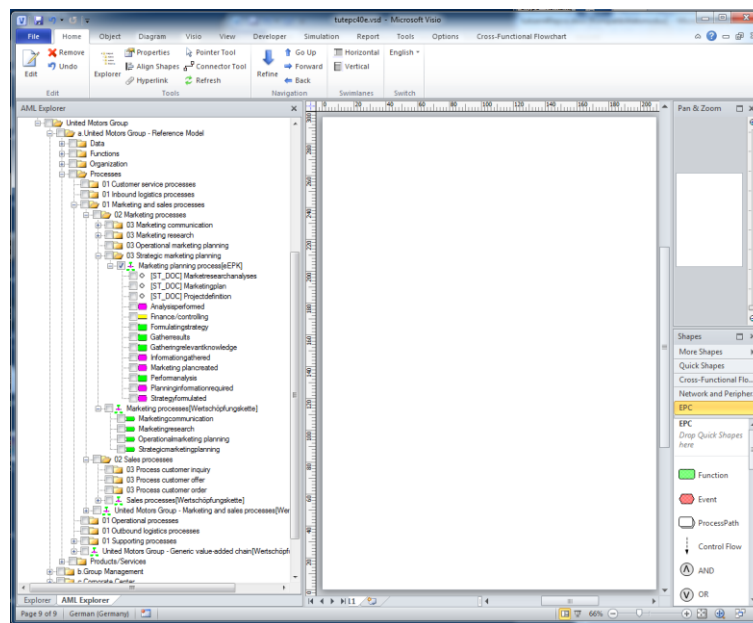
- AML is the ARIS XML Export format.

⁴ ARIS is a trademark of Software AG

- EPML is a vendor-independent exchange format for EPC (EPC Markup Language) <http://www.mendling.com/EPML/index2.html>). AML can be converted to EPML and vice versa.

13.1. AML

SemTalk can read/ write the ARIS XML format (AML). Select the diagrams (Model) of choice in ARIS⁵ then export the model/model components using the context menu 'Export/Import->XML Export'. AML Explorer shows the ARIS folder structure of the AML file you have selected. Use the check boxes to mark the objects you would like to import into SemTalk. Right-Click "Import" will import the selected objects into SemTalk.



The AML Import Options can be opened via a right click menu in the AML Explorer window. If available, ARIS models can be imported for existing languages. Simply select all of the languages you would like to import. In order to review ARIS XML in IE, or to use it in SemTalk and/or other programs, you need a file named "ARIS-Export.dtd". This can be found in the ARIS program folder in a directory named 'aml'. Please copy the DTD to the directory where the XML export is located.

The Import Option allows you to specify which object type(s) are mapped to specific SemTalk classes and which symbols are mapped to specific Visio masters.

SemTalk imports all languages available in the ARIS export file. You may choose the actual language for viewing the model after import. "Primary language" is the language that will be used to create internal object names.

⁵ Supported versions for import are 6.1, 6.2 and 7.x. For other versions please contact support@semtalk.com

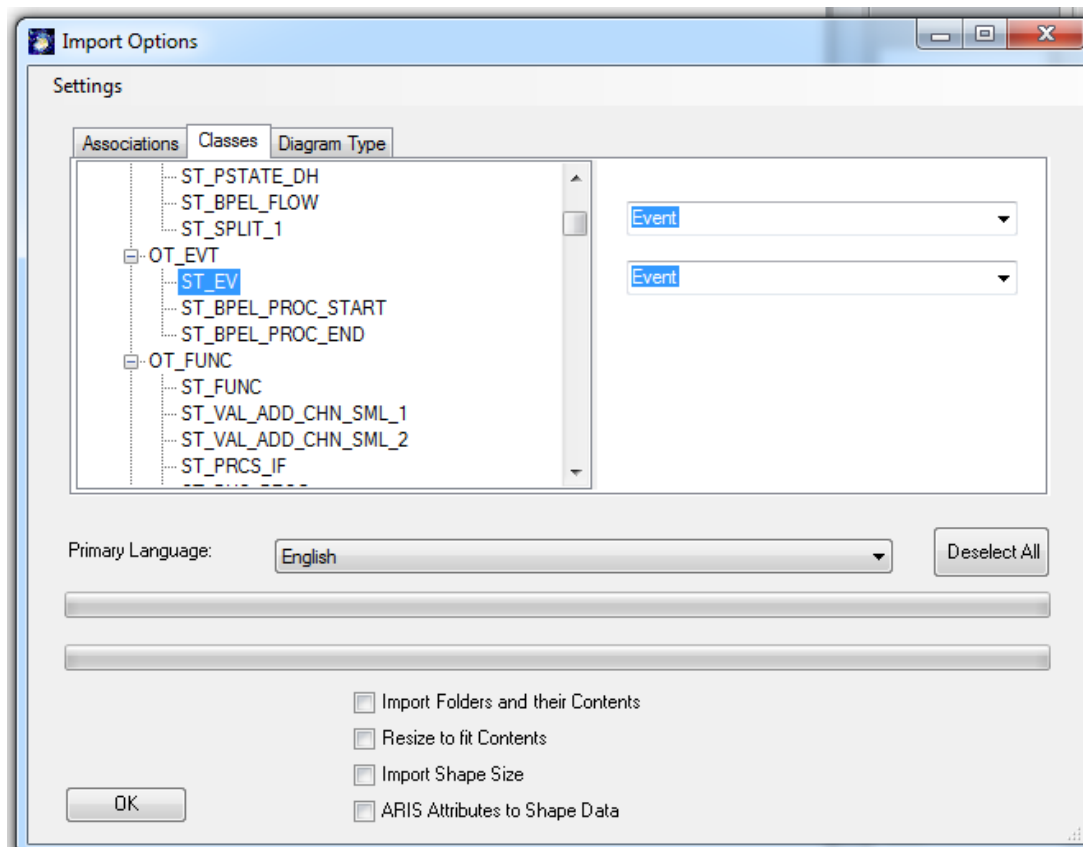
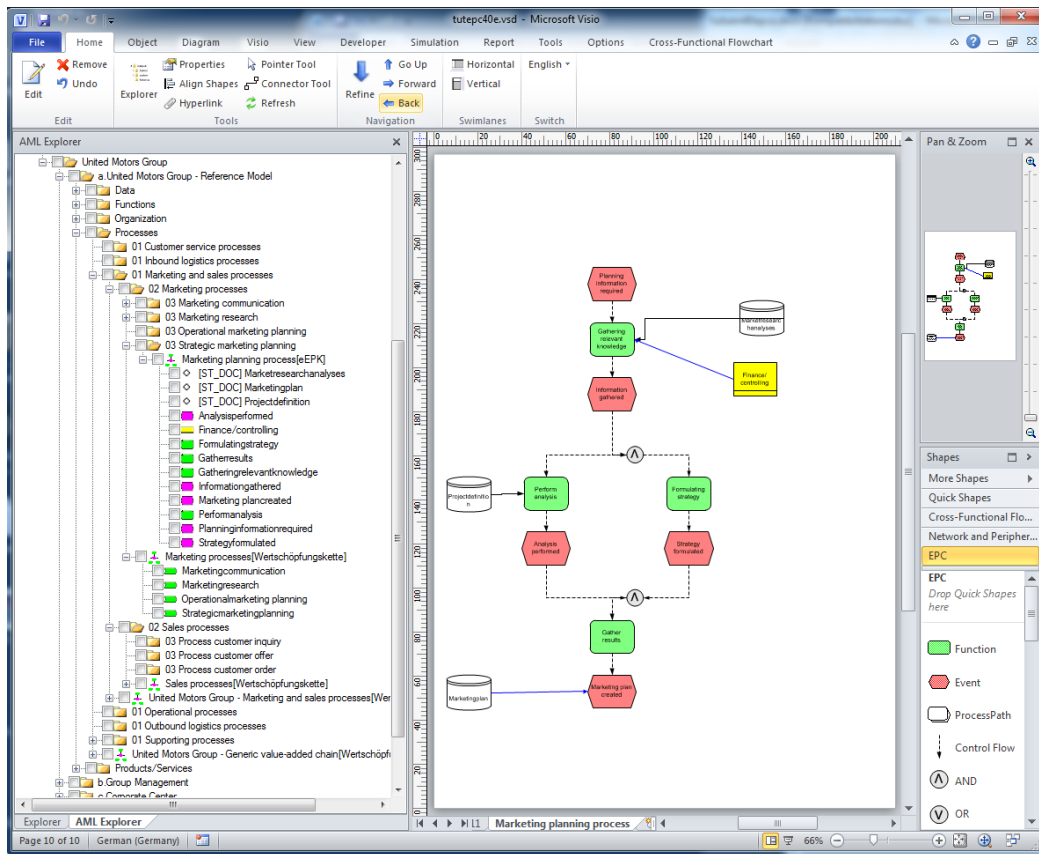


Figure 2: ARIS Import Options

Select the diagrams of your choice and import them to SemTalk. ARIS diagrams are often very large so it is recommended to adjust to page size to “Resize to fit Contents”.

ARIS has more than 100 diagram types with more than 200 object types. Since we want to keep our EPC version easy to use and understandable, we do not include all of the available objects in the delivered version. New diagram and object types will be created dynamically during import based on the content of the imported model. The import will not create any new Visio Shapes from ARIS. Unknown object types are assigned the “Instance” Shape (gray ellipsis). However, if you add the right shapes with the right ARIS import names to the Visio/SemTalk document stencil before import, they will be recognized. Please contact support@semtalk.com if you need assistance.

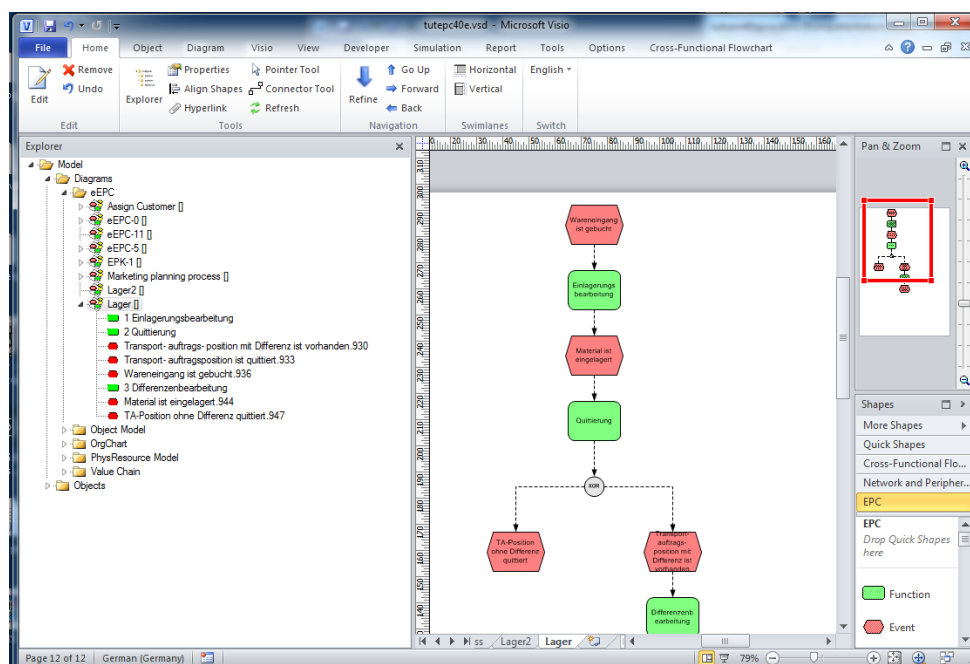
If you use the option ‘Import Shape Size’ positioning and size will be taken from ARIS. SemTalk & Visio shapes are usually much smaller.



The export to ARIS AML is available using **File -> Save & Send -> EPC**.

A YouTube video explaining AML Import is available in English at:

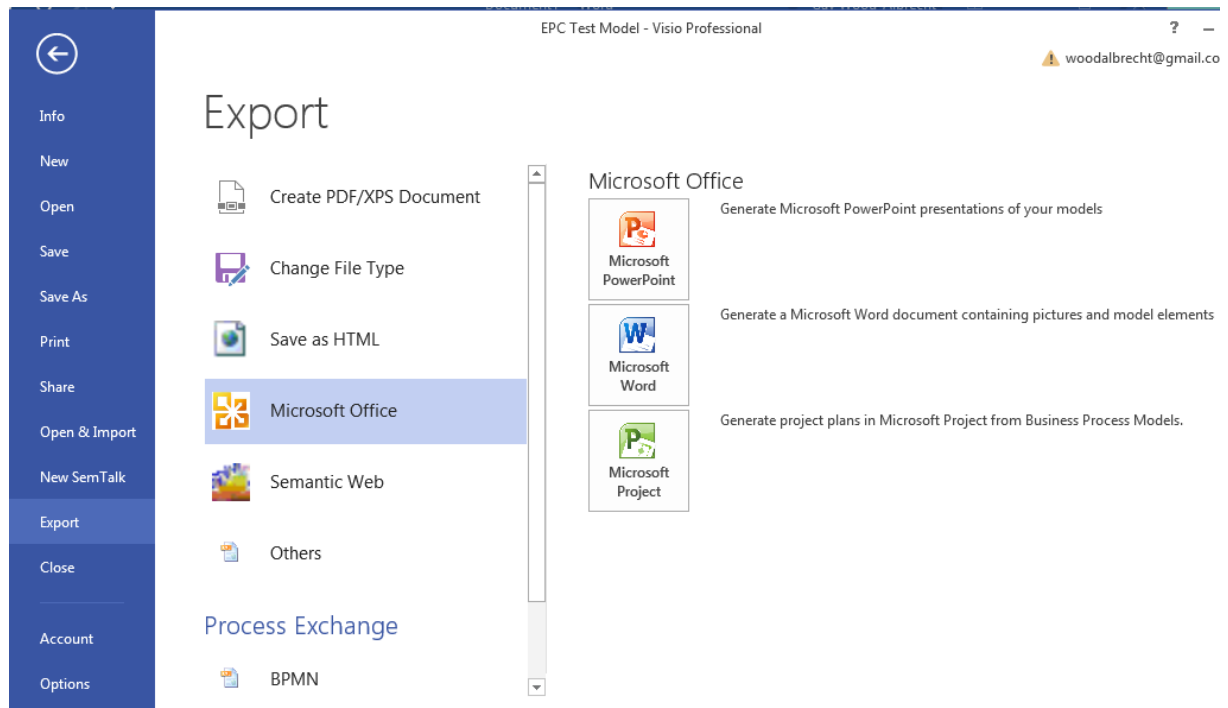
<http://www.youtube.com/watch?v=D0mB843RRYY>



14. General SemTalk Features

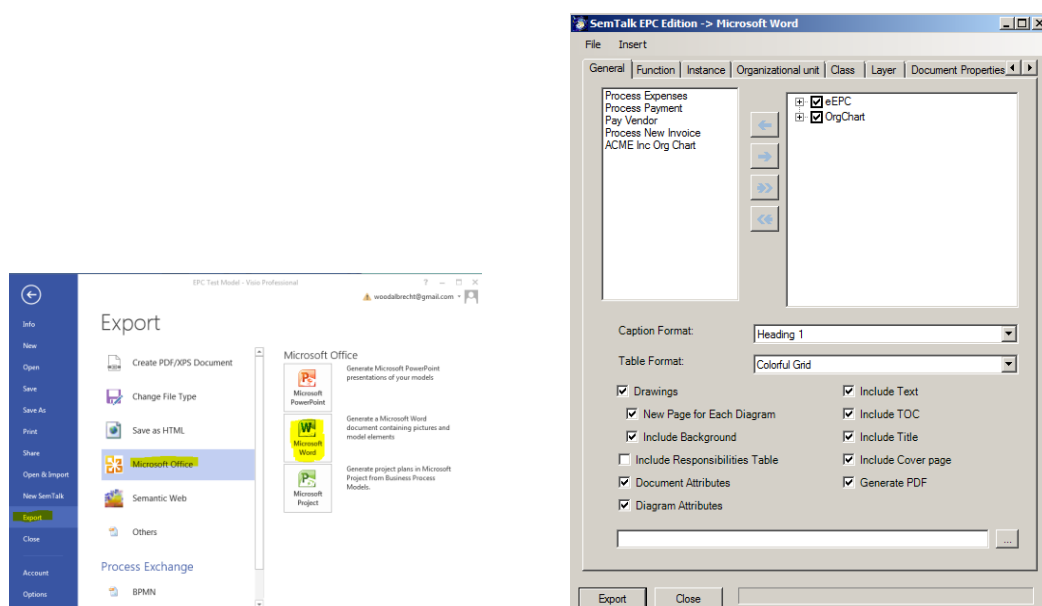
14.1. Extras and Tools

Microsoft Office Export



14.2. Microsoft Office Word Export

Generating documentation of your models is quite easy with SemTalk and Microsoft Office Word. Select **File→Export→Microsoft Office →Microsoft Word**



A tree view of existing model diagrams classified by diagram type is shown in the top left corner. Simply select which diagrams are to be exported using the arrow buttons found between the two boxes. Use the **Insert->Add Text File** button to insert text files (.doc, .txt, etc.) or **Insert->Add Reports** to add reports into the Word export. The items' sequence on the list on the upper left corner determines the order of the diagrams and text in the Word export.

Use the File menu option of the dialog, if you want to do the following:

Load Diagram List	Load a predefined diagram list to generate as Word document.
Save Diagram List As	Save the current diagram list as .txt file. You may load this file and generate a custom Word export.
Open Document Template	SemTalk loads the Word Normal.dot as default template, but you may select a custom template with this command.
Clear Document Template	Removes any assigned Template
Load Settings	Loads a Word Setting File
Save Settings	Saves a Word Setting File

Use the Insert menu option to do the following:

Insert a Text File	Inserts a text file into your export.
Insert a Report	Inserts a report into your export.

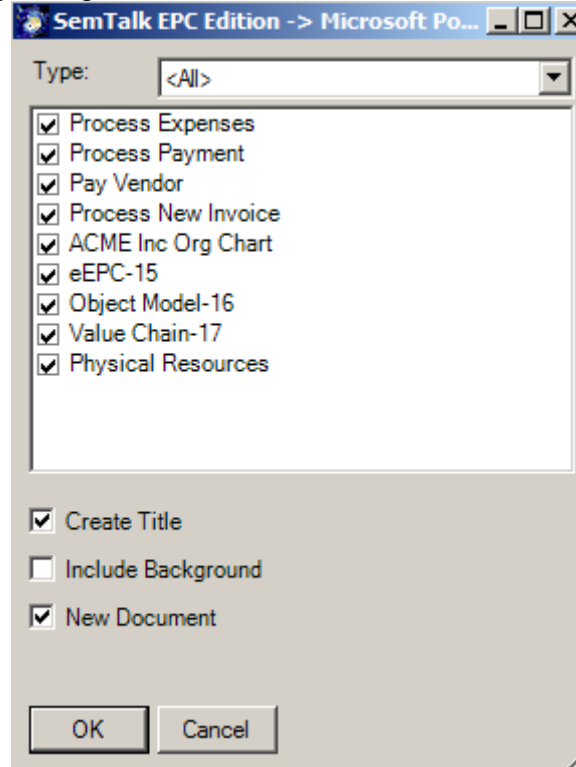
More layout options are available in the Word export dialog:

Caption Format	Used to define the heading format according to your MS Word.
Table Format	Used to define the layout format of your tables.
Drawings	Used to include diagrams in the Word export.
New Page for Each Diagram	Used to define to insert one or more than one diagram in a page.
Include Background	Used to include the diagrams' background (e.g. company's logo), if they have any.
Include TOC	Used to include a Table of Contents at the beginning of the Word document.
Include Text	Used to include tables in your Word document.
Include Title	Document Title
Include Cover page	Document Title on an extra page
Generate PDF	Automatically generate PDF using Word2007 save as PDF

In the **Instance** and **Class** tabs, select which object properties and information to include in the Word export.

14.3. Microsoft Office PowerPoint Export

The Microsoft PowerPoint interface makes it easy to present models quickly and effectively. Open the export dialog for PowerPoint using the menu item File → Export → Microsoft Office → PowerPoint to generate a PowerPoint presentation from a SemTalk model. You should see the following dialog now:



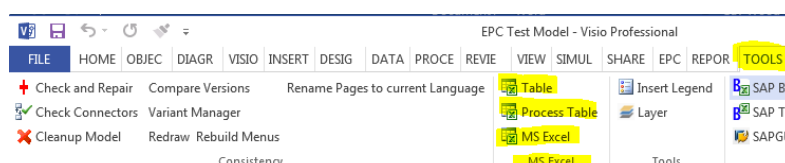
You have the following options:

Type	Use to filter the diagrams after their diagram type.
Create Title	Use to give or not each presentation's slide a title matching the SemTalk's page titles. This is not recommend if you have a background page which also shows the page title
Include Background	Use to include or not the diagrams' background (e.g. company's logo), if they have any.
New Document	If this option is not checked AND a PowerPoint presentation is open, the slides are added to the open presentation

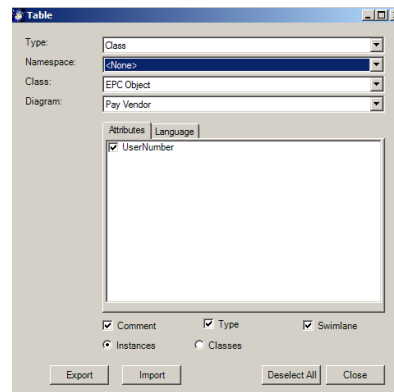
14.4. Microsoft Office MS Excel Import

The MS Excel Import function can be very handy when creating big models with lots of classes and or instances. Instead of creating every single class and/or instance in SemTalk, you can import them from a MS Excel spreadsheet. The only condition is that the spreadsheet must reflect SemTalk's logical structure.

To import objects from a MS Excel spreadsheet into a model, select Tools.



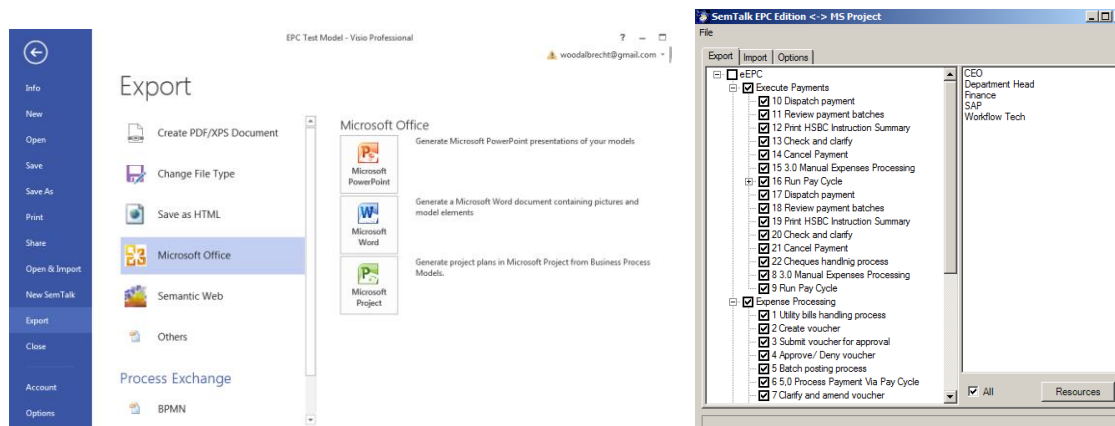
Then select **MS Excel**. Then select an appropriate MS Excel spreadsheet (e.g. bulk-import.xlt). Once you are ready to import the objects and information in the spreadsheet, select the Tools - Table menu. You will see the following dialog:

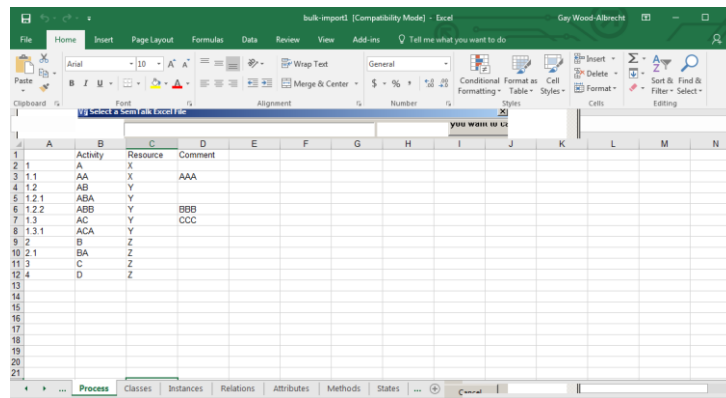


14.5. Bulk Import Spreadsheet

Access the Bulk Import Spread sheet in the File – Export – Microsoft Office – Excel menu. Use the checkboxes to select which objects and information SemTalk should Import/ Export to Excel. First Export SemTalk model data to create an Excel file format that is capable of importing the data back into SemTalk. “Import” imports the current elements back into SemTalk. “Clear” removes all content from the Excel. “Process” is a sample data format intended for process modeling notations to create a simple process hierarchy from the spreadsheets data.

All macros are included in the document as source code. The intension of Bulk Import is to provide you with an API sample how to read and write SemTalk content. If you copy/change the macros to match your requirements, it is easy to export/import mass data from virtually any other application.





14.6. Copying Flow Elements from Document to Document

Flow elements can be copied from one Visio file to another. Shapes need to be selected and copied by using Copy in the context menu or by using CTRL C. Content can then be pasted into a different EPC document. Copied content will still contain defined attributes and objects found in its original source object.

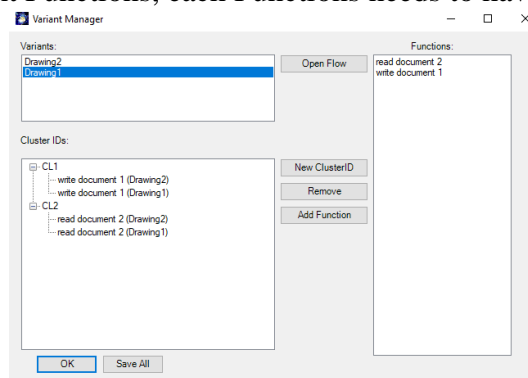
NOTE: Both documents need to be opened in the same Visio instance!

14.7. Managing Variants and ClusterIDs

For reporting purposes, it can be useful to compare/connect different EPC Functions found on different documents. ClusterIDs can be used to match Functions.

Cluster ID is an EPC Function attribute and can be edited via the Attribute tab in the Edit dialog (right click on Function → Edit → Attribute tab) or by using the Variant manager (Ribbon → Tools → Variant Manager).

In order to cluster different Functions, each Functions needs to have the same ClusterID.



Variant Manager reads all open documents in the current Visio instance. In the top left list box, all documents are displayed and can be selected. When selected, the Functions list box is triggered to display all available Functions in the selected document.

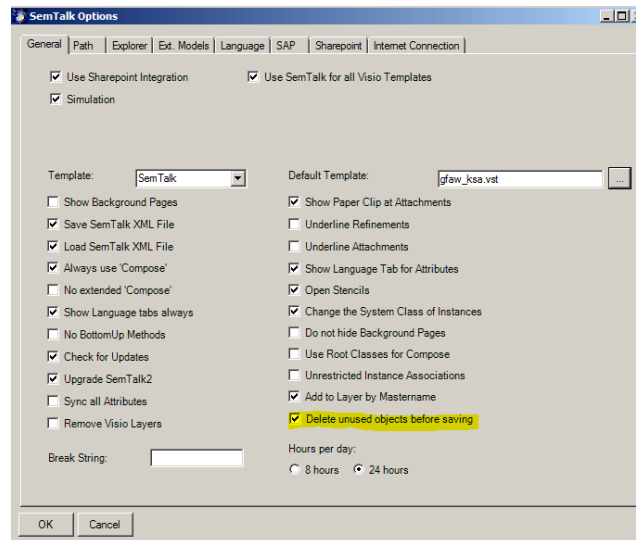
New ClusterIDs are created by the “New ClusterID” button. The Function ClusterID and the target Function ClusterID need to be selected before using the “Add Function” button. The ClusterID Attribute of the added Function will then be set to the selected ClusterID. Each Function can have only one ClusterID.

By using the “Save All” Button all documents in the current Visio instance will be saved.

14.8. Delete unused elements before saving

In order to clean up the process models from unused data, SemTalk can be setup to delete specified objects with reference to Share Point Lists.

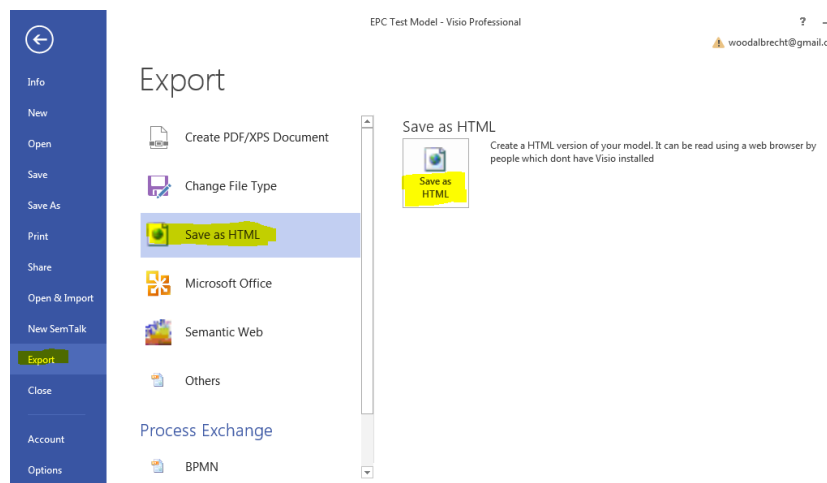
In SemTalk Options → General check “Delete unused objects before saving“.



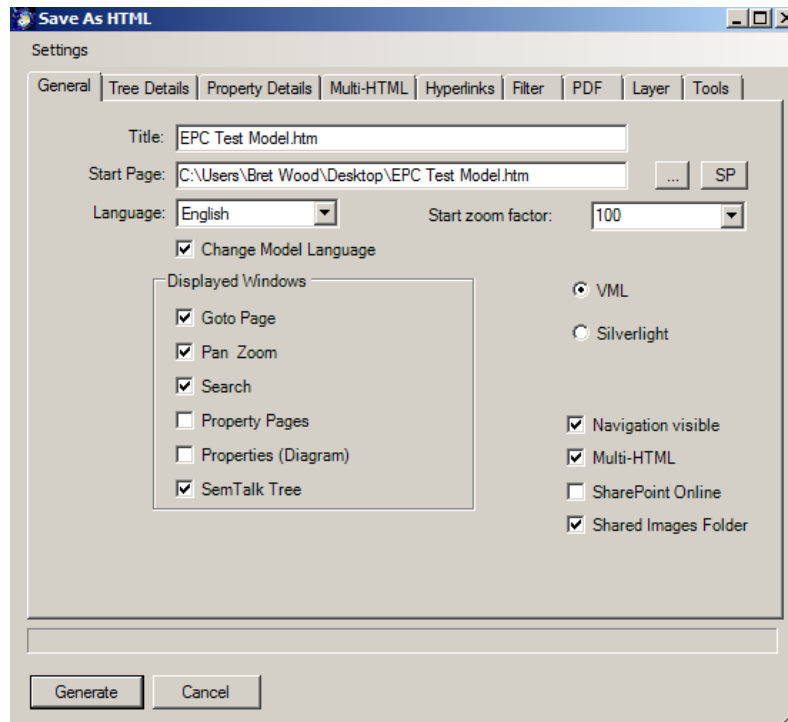
Information about the kind of objects that will be deleted can be customized in C:\ProgramData\SemTalk\ClearModel.xml. The default setting will delete unused Functions, Events, Decisions, Resources and Attachments.

14.9. HTML Generator

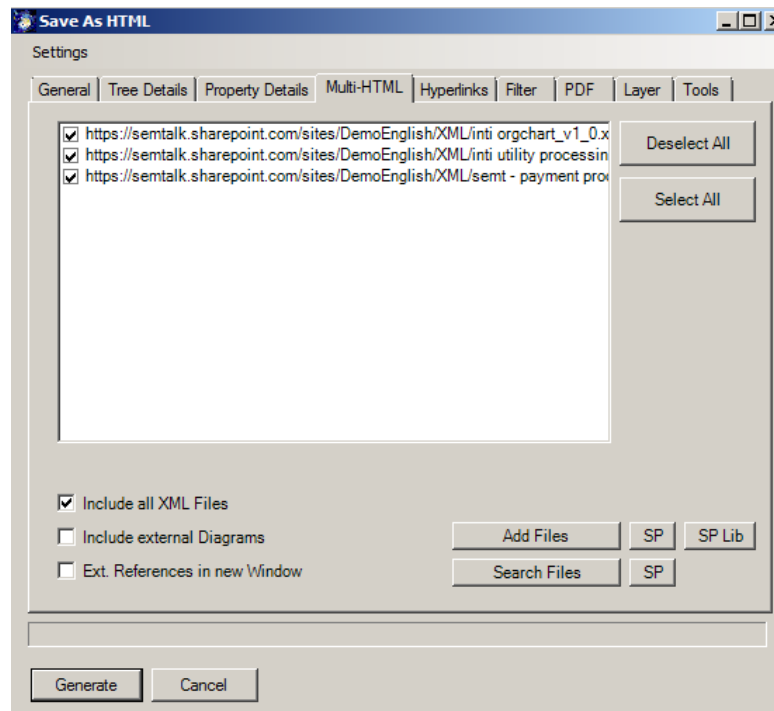
In order to create an HTML version of your model go to File – Export:



NOTE: Remember to save your diagram before using the HTML generator.



Title	Specifies the name of the Website. In case of working with multilingual models, the next field is used to specify the language in which the Website will be saved.
Start page	Determines the file path of the start page to be generated. Do not generate to network drives. Always generate to a local directory such as C:\myhtml and transfer the html afterwards to the fileserver.
Select the following options to add elements and functionalities to the HTML export from the General tab.	
Goto Page	Facilitates a fast navigation across the diagrams.
Pan Zoom	Allows zooming of the diagrams.
Search	Enables the search in the website.
Property Pages	Shows the properties of a selected object in a diagram
Properties (Diagram)	Even if you have not used Property Pages for all objects, you may want a Property Page for each diagram for navigation purposes.
SemTalk Tree	Reproduces the SemTalk Explorer in the Website
VML / Silverlight	Specifies how Visio will generate graphics
Language	Use to define the language of preference for the model attached objects.

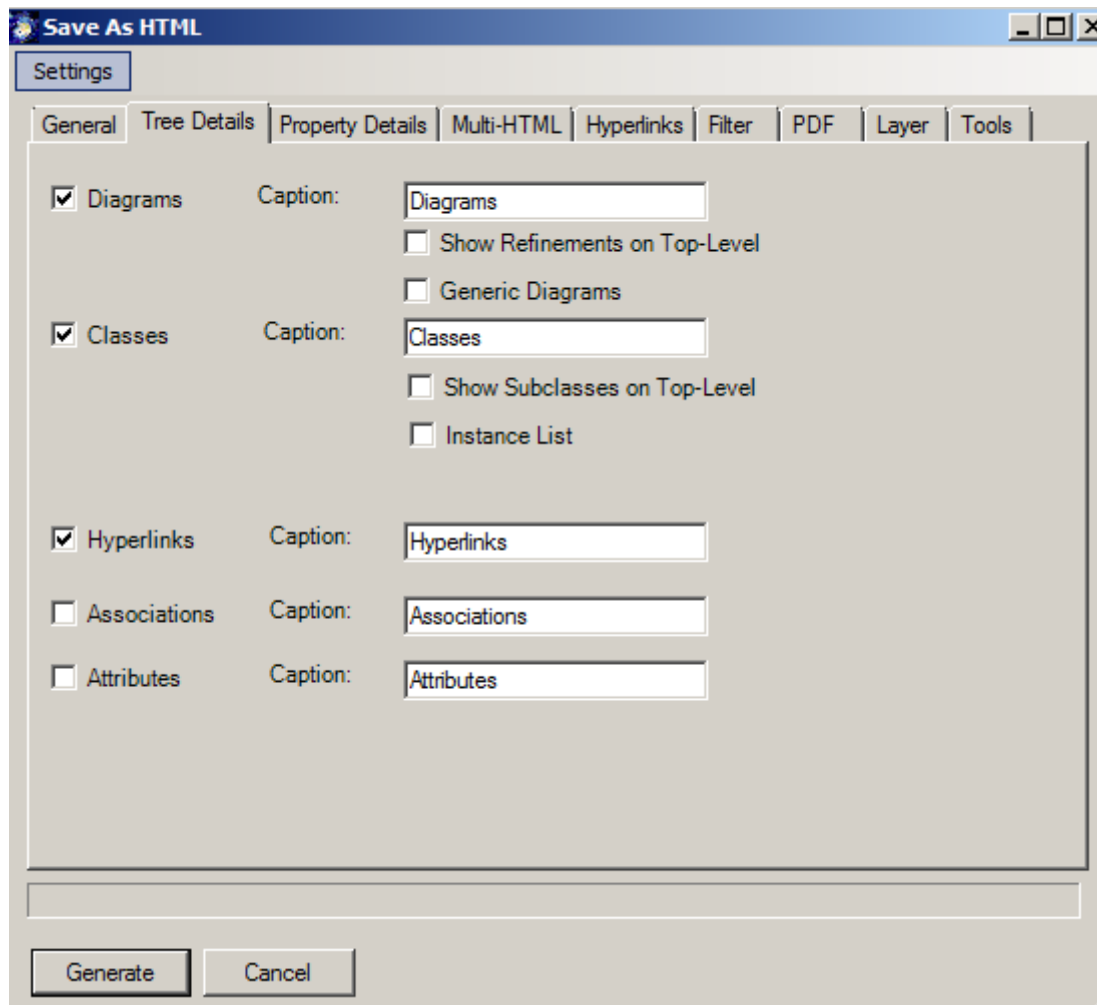


The **Multi-HTML** tab allows you to decide which models to connect to your HTML export.

Include external Diagrams	Select to generate links to from objects in the to-be HTML model to other external HTML diagrams. NOTE: When you open the HTML files of the external models from a HTML model, all the start pages (not the supporting files) must be located in the same directory.
Ext. References in new Window	If selected, external referenced HTML models or documents (e.g. Word documents, forms, etc.) open in a new internet browser instance.
Add files	Used to add and search files yourself to the list of files for the multi-html export.
Search files	Used to search and to automatically add files which have a reference in the current model to the multi-html list.

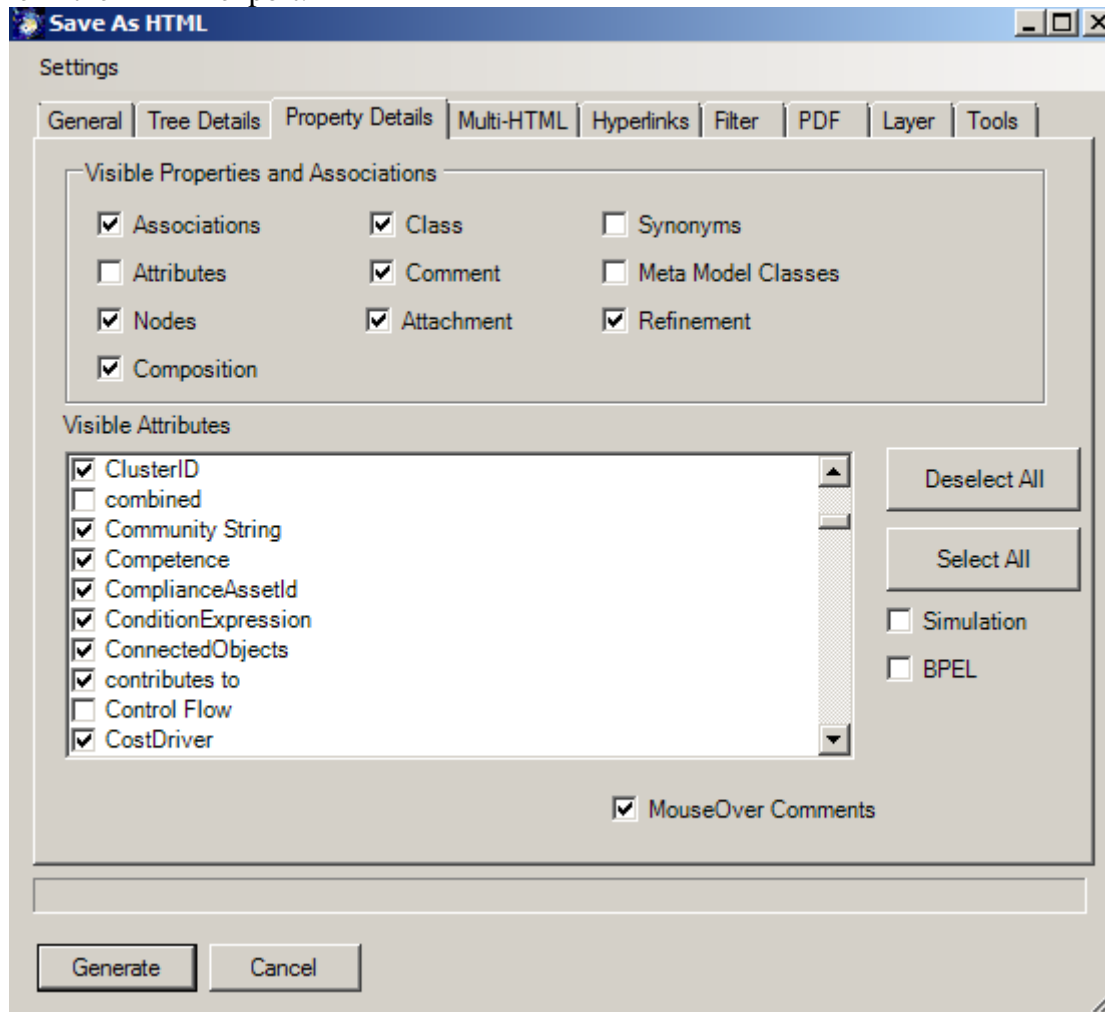
NOTE: The linking of HTML files works only when the index files (i.e. HTML start files) of the linking web pages (models) have the same name as their XML files, since the intern referencing uses the XML file names of the external models. Please notice that the name of the index file should not exceed 38 characters.

Under **Tree Details**, you can choose which object types are to be displayed. Normally, you will want to display classes and diagrams but you can also choose associations, attributes, synonyms or instances.



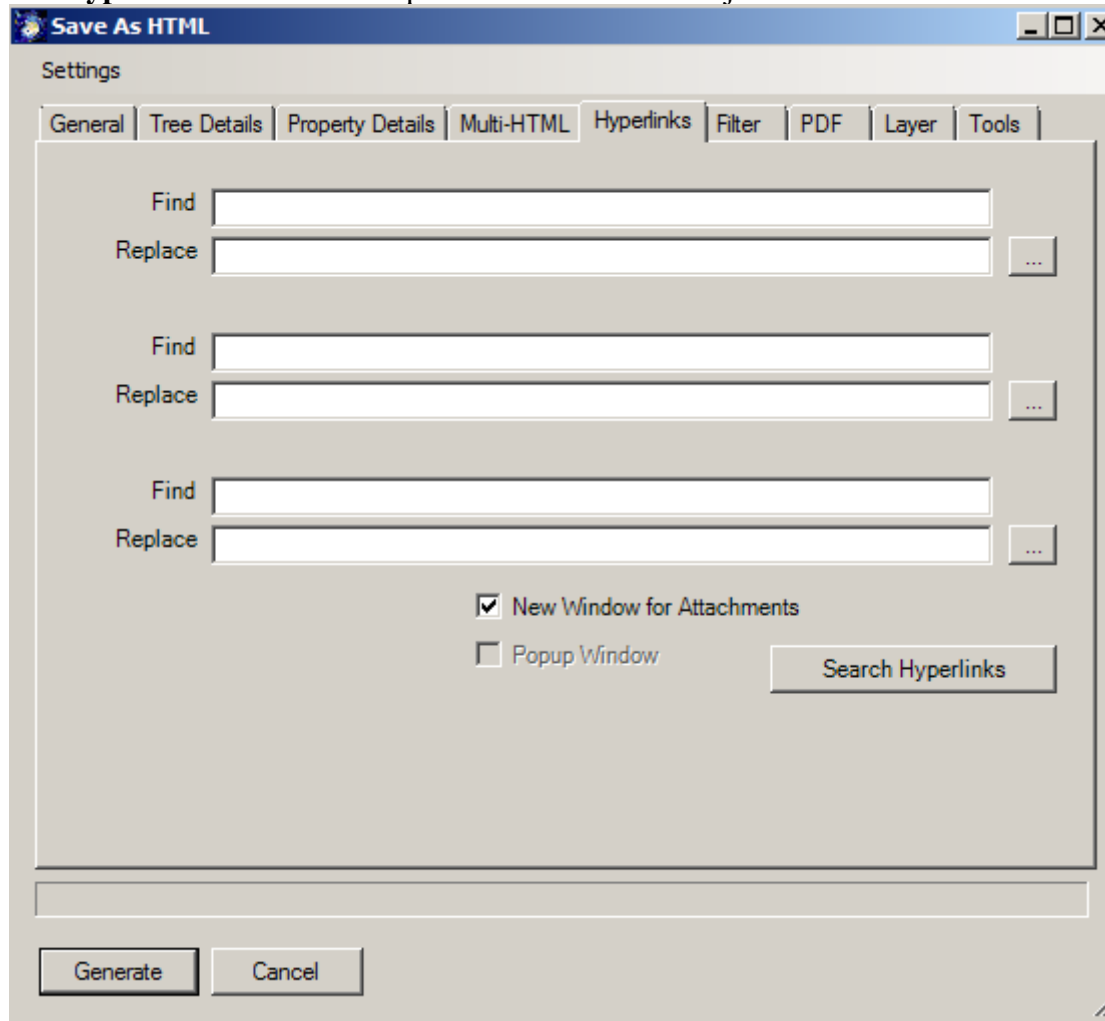
Diagrams, Classes, Hyperlinks, Associations, Attributes (Caption)	Normally, you will want to display classes and diagrams, but you can also choose hyperlinks, associations and attributes. You may also change the node name of these objects in the tree view. (e.g. Classes -> Concepts or Associations -> Relations).
Show Refinements on Top-Level	Specify if diagrams that are refinements of other elements should become root nodes in the tree. If not checked, user have a more hierarchical navigation, if it is checked users get a complete list
Generic Diagrams	In many cases generic (or “Untyped”) pages are used for displaying the meta model. These pages should often be excluded from the html representation.
Show Subclasses on Top-Level	Use to display in the tree view a hierarchical structure (subclass of) for each class.
Instance List	Use to display in the tree view only a list of instances and no classes.

In the **Property Details** tab, you can choose which properties are to be shown in the property frame in the HTML export.



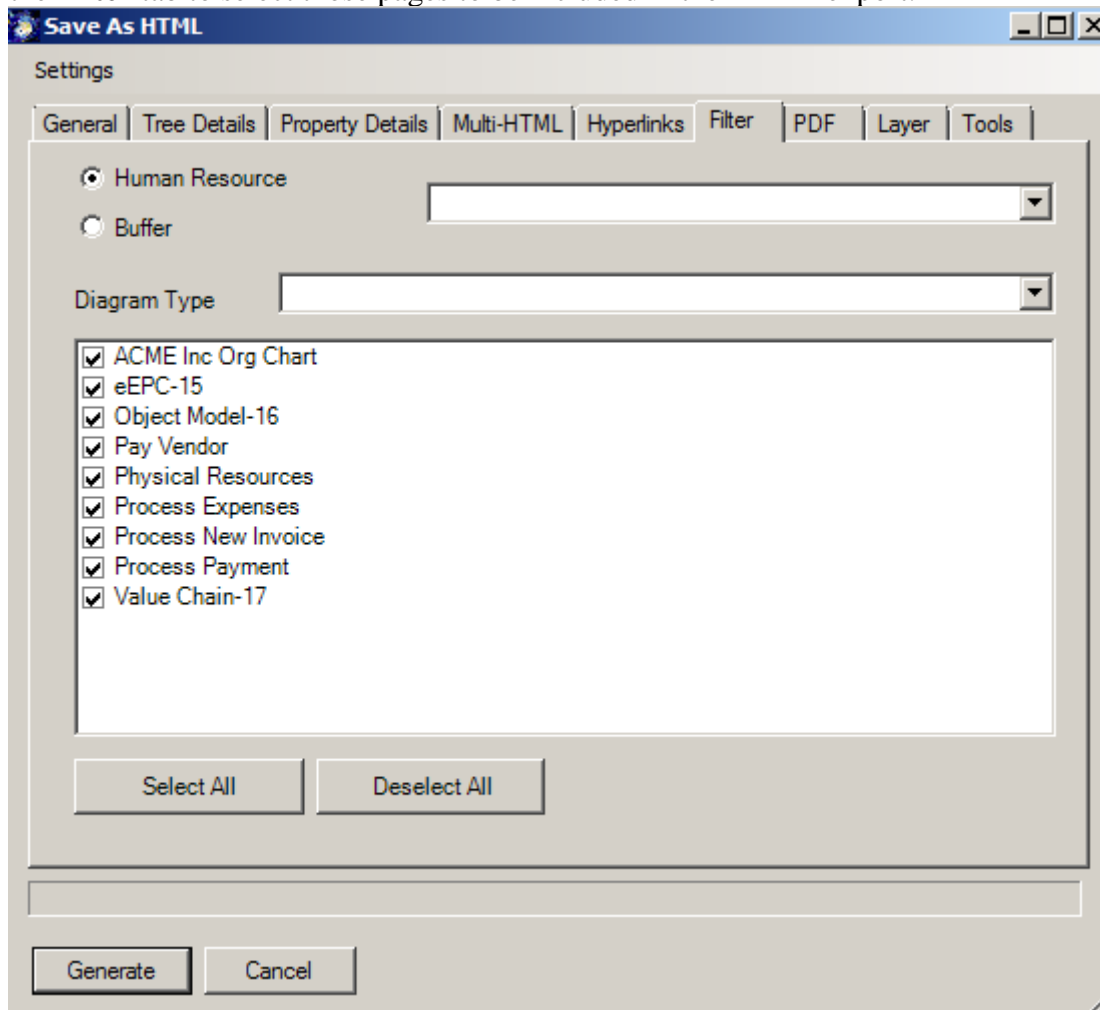
Visible Properties	Select the object properties that you would like to see for an object in the property frame in the HTML export.
Visible Attributes	Select specific properties and associations that you would like to see for an object in the property frame in the HTML export. <i>Simulation</i> and <i>BPEL</i> allow you to select a common set of attributes. Often only some attributes are of interest. This allows attributes that are not wanted to be hidden.
Show Comments in a Popup Window	Specify if an extra menu entry for the comment should be generated. The menu will popup an extra window showing to comment.
MouseOver Comments	Specify if the comment of an object will be shown if a user hoover over the shape

Use the **Hyperlinks** tab to edit the path of the referenced objects in the current model.

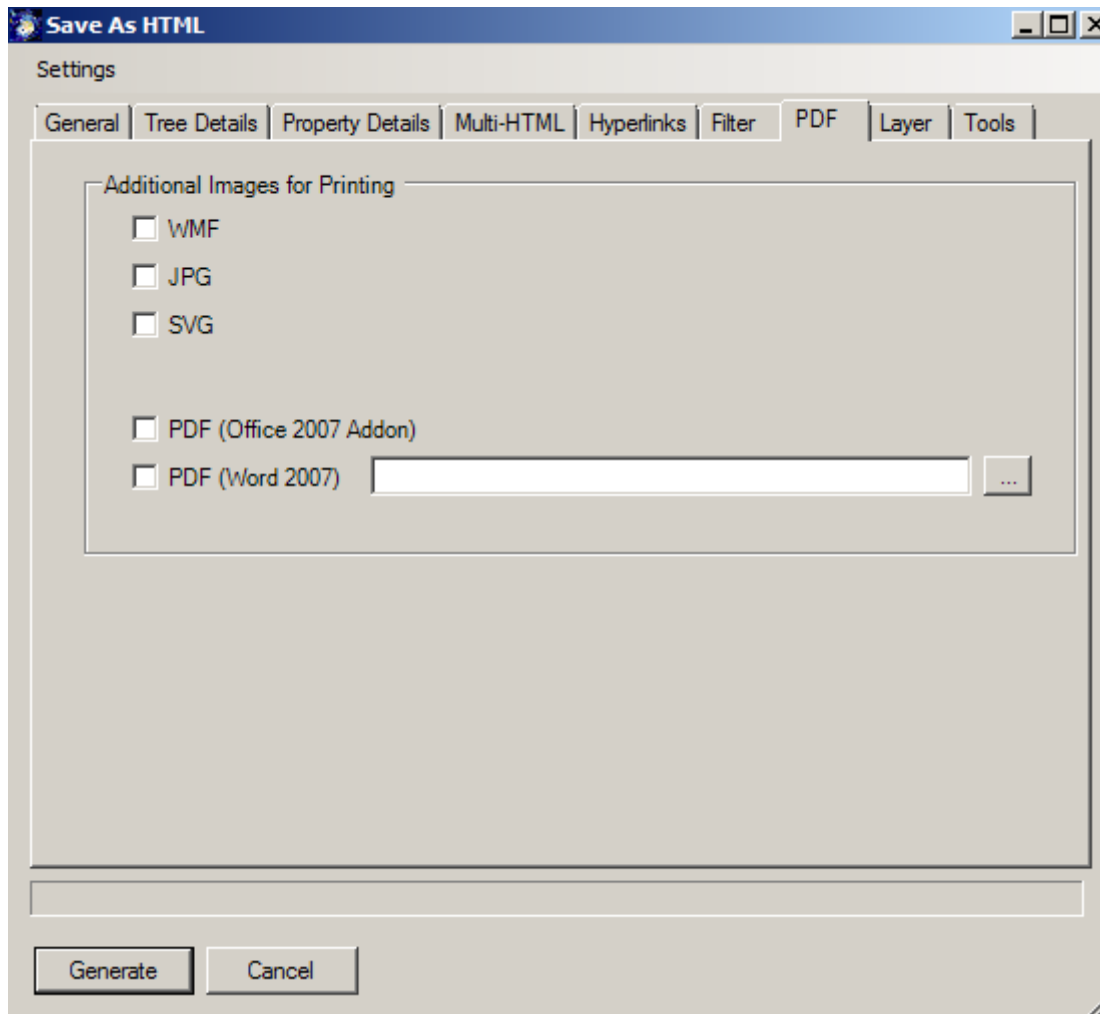


Find Replace	You may search and replace up to three sub paths. The button Search Hyperlinks will search for existing paths in your model and display them in the Find text field. You may replace absolute paths with relative paths (“../”). Please remember that the relative path does not begin with the “Start Page” directory, but with the subdirectory “xxx files”. The “../” in the HTML tag tells the browser to go up one directory level (i.e. to the “Start Page” directory in this case).
Copy Attachments	Used to indicate that files attached to objects in the model will be copied to the target directory of the HMTL export.
New Window for Attachments	Used to indicate that the attached files should be opened in a separate instance of your internet browser.
Popup Window	Attachments will open in a limited Popup Window instead of a new browser window.

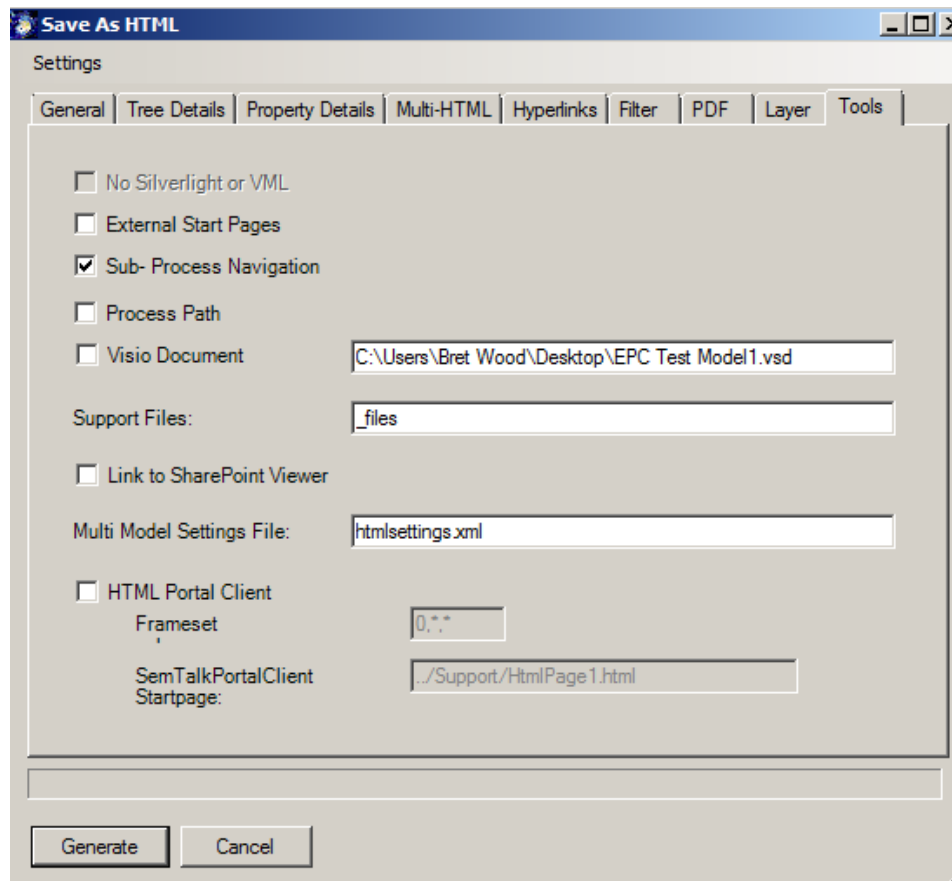
Use the **Filter** tab to select those pages to be included in the HTML export.



Organization unit, Buffer	(If modeling method applies) Select one of the options to file the adjacent combo box with the corresponding objects. Select one of the object's filters from the list of diagrams below. Mark only those diagrams where the object is present.
Diagram Type	Selecting one of the diagram types filters the list of diagrams below, marking only diagrams of that type.



The PDF tab allows you to specify that for each page a printable copy in the desired format will be created. This simplifies the printing of individual pages. You may choose from Bitmap formats such as **WMF**, **SVG**, **JPG** or use PDF. You can also use Word (-Export) to generate the PDF. Please select a template for your use case. Other options can be found at the **Tools** tab.

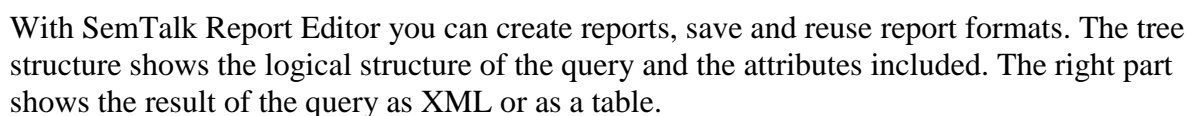


Other Browsers (Not IE)	Visio generates HTML for IE 6 or higher. HTML export for other browsers has limited functions and generates a large number of small html pages.
External Start Pages	For each object, SemTalk generates an individual start page, where external models can be referenced.
Sub- Process Navigation	Navigate between lower level diagrams in process models
Process Path	Breadth crumb navigation for process models. You'll see a shape with text REFINEMENTPATH on the background page
Visio Document	SemTalk generates additionally a Visio document with the selected properties for the Visio Viewer. SemTalk object attributes are transformed into Visio User attributes.
Support Files	Specify how the folder for support files will be named. "Files" is not allowed for SharePoint
Link to SharePoint Viewer	A menu entry with a link to a specific webpage will be added. The ID of the object will be passed as an argument. The intended use is to link elements to SharePoint forms

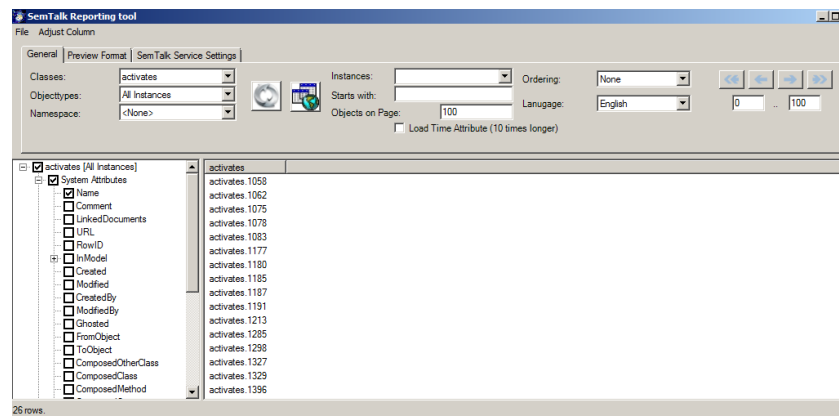
The resulting HMTL:



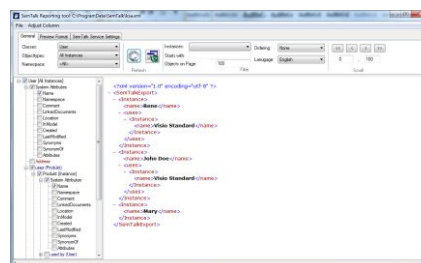
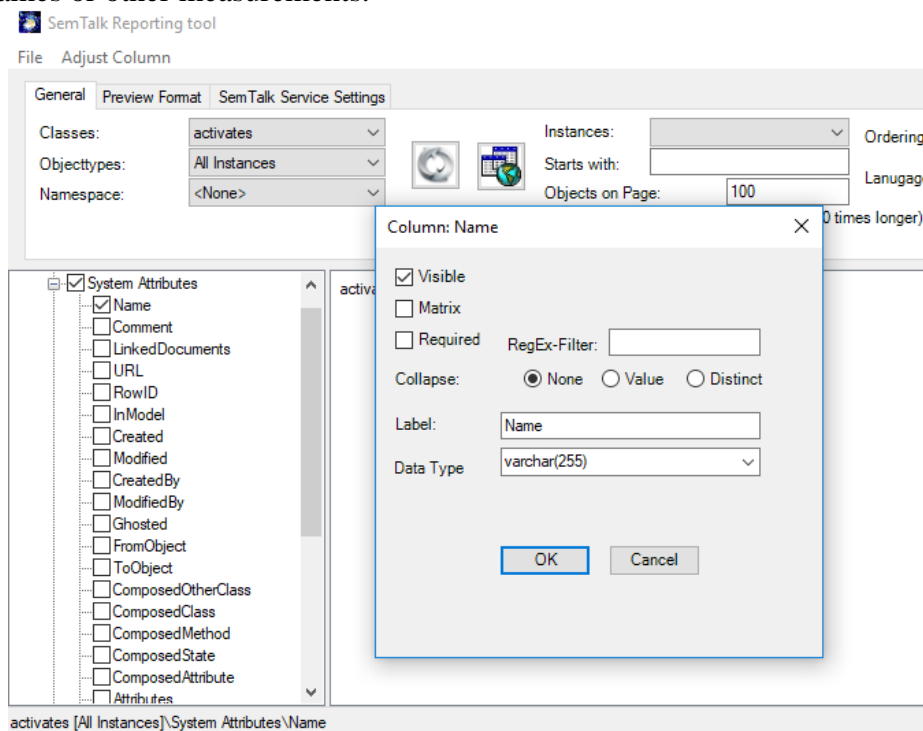
Open SemTalk Report Editor selecting **Report** → **Report Editor**.



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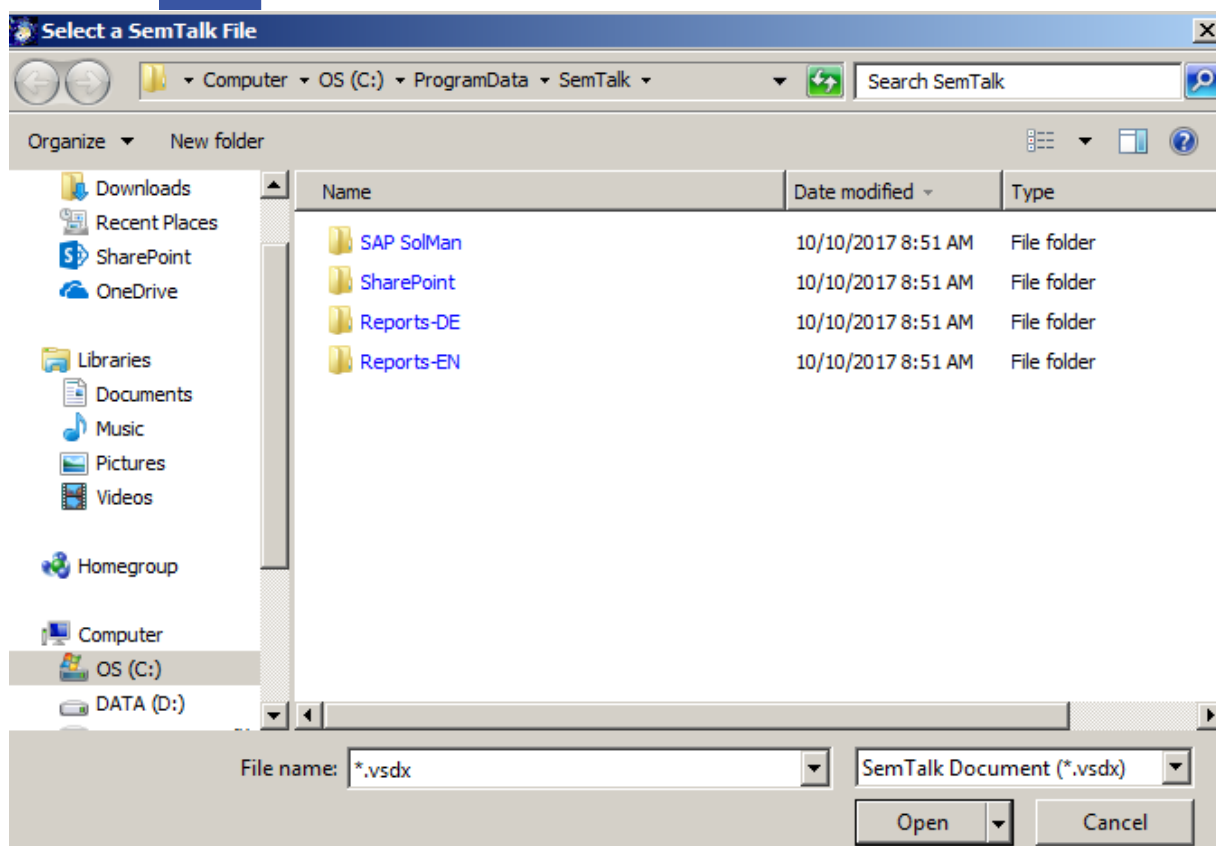
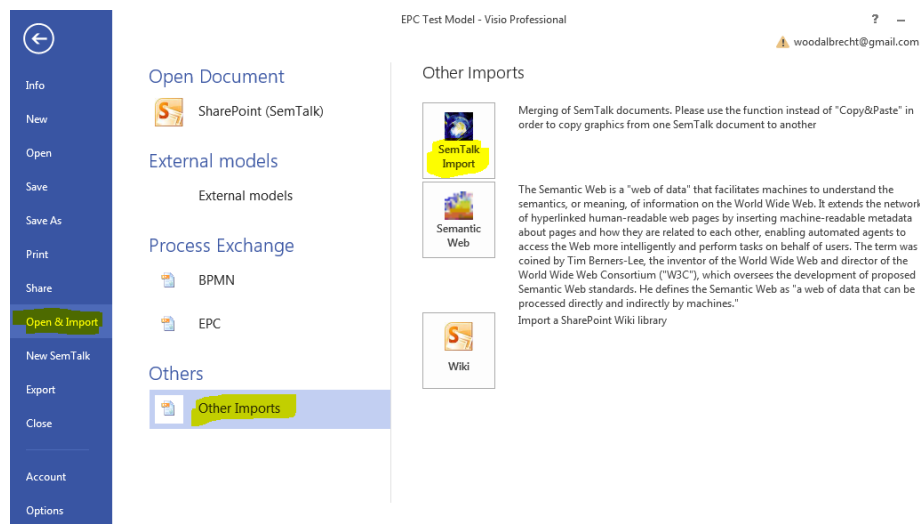
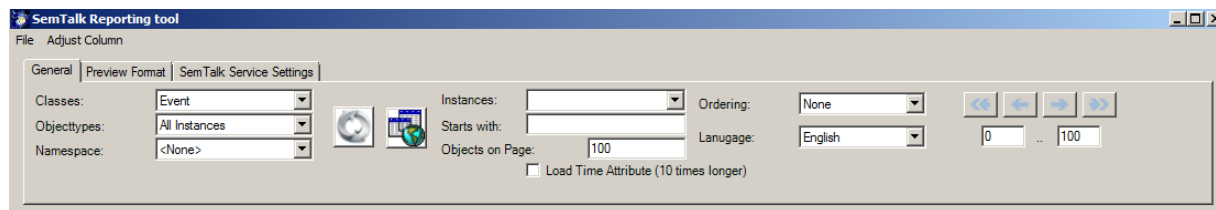


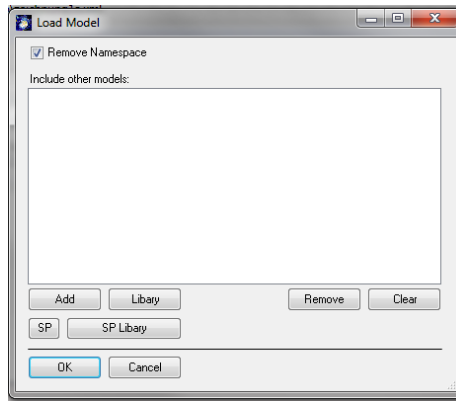
Attributes can be used to filter report results. Select an entry in the explorer, e.g. Name or some measurement attribute and now chose Customize Column in the Adjust Column menu. The text box RegEx-Filter can process regular expressions for filtering or just simple string and numbers. Using filtering the report results can limited to a sub-set in regards to specific function names or other measurements.



Model Objects, Attributes and Associations determine the structure of the reports. Queries can be nested to as many levels as needed.

The XML output can be saved as an XML file, as html table, which can be opened in many tools including MS Excel, directly to Excel or to a SharePoint list.

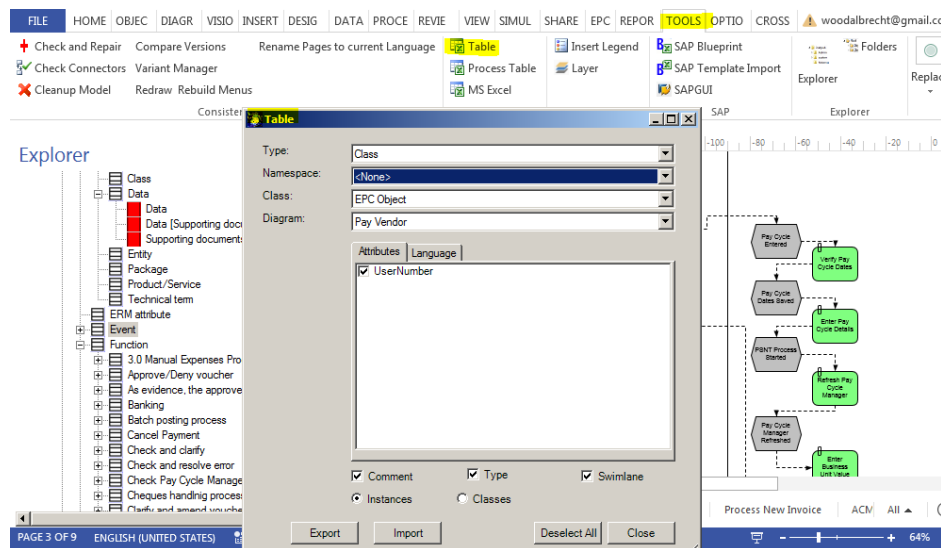




Use the menu option **File → Load Model** to specify additional options for report. Allows the selection of other models to be included when running multi model reports. Other models will be merged before the report is being executed. Please make sure that you are using models with a compatible meta models.

14.11. Table Editor

Table Editor tool offers another way to edit information in your models. You can create and use Microsoft Excel tables to visualize and edit information about classes and instances in your models.

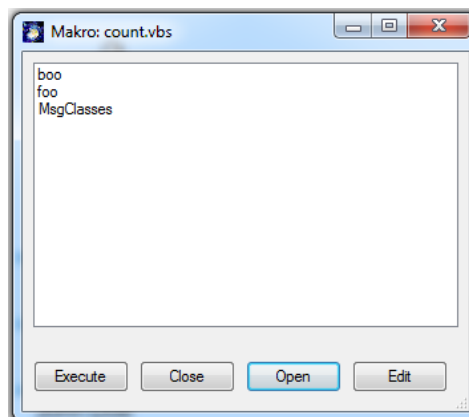


Type	Used to filter SemTalk's abstract objects: Attribute, Class, Method, Relation, State
Namespace	Use to filter according to namespaces. <None> for classes with no namespace. <All> for classes regardless their namespace.
Class	Select a class to see a list of its attributes (if any). <All> to list the attributes of every class in the model.
Diagram	Select a diagram as filter argument. <All> to take into account every diagram. <None> to list those object that do not appear in any diagram, but exist in the object base.
Comment	Check to include the corresponding 'comment' in the table.

Instances	Select to generate a table with the instances of the class(es) you set as filter arguments.
Classes	Select to generate a table with the subclasses of the class(es) you set as filter arguments.
Export	Generates an Excel table according to the filter arguments.
Import	Imports the values you changed in the generated table.
Language	Use to translate the objects name in different languages and import them in the model.

You may edit attribute values now in Excel:

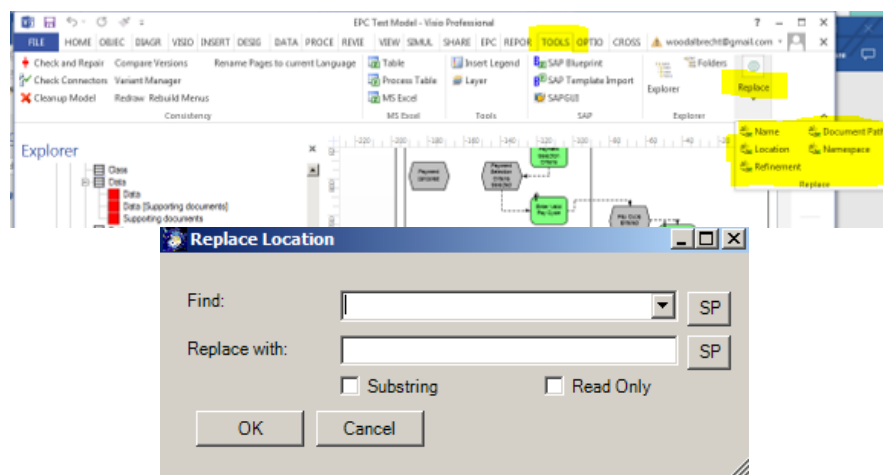
14.12. Macros



Macro commands allows you to run small, SemTalk complementary applications written in a script language.

The above example shows three subroutines contained in the file count.vbs. You can open a new macro file by clicking **Open**. Edit will open a script editor (not part of SemTalk). **Execute** will run the selected subroutine.

14.13. Replace



The **Replace** command is used to globally replace strings (rename) in different object properties. The following options are available:

Name	Replace the name of an object with another character string globally.
Location	Globally replaces a location path of referenced objects with a character string.
Document Path	Globally replaces a location path of attached files (e.g. documents) with a character string
Namespace	Globally replaces the name of an object with another character string.
Refinement	This globally replaces the location of a refinement with another character string. (e.g. used after moving the file of an external refinement to another directory)
Substring	This checkbox must be checked if you do not want to match single documents e.g. changing a directory path
ReadOnly	Include ReadOnly objects