metabuilder

DISCON 2006

MetaBuilder

Quick Start

Guide

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Introduction

The Quick Start guide serves the purpose of introducing the interface and features of MetaBuilder and will guide you through the required step by step methods of creating architecture models. The quick guide is a condensed form of the MetaBuilder User Manual but is compiled to replicate general modeling techniques The guide will also introduce some of the features that will add value to your architecture model.

The Quick Start Guide will follow the following path to creating an architecture model.

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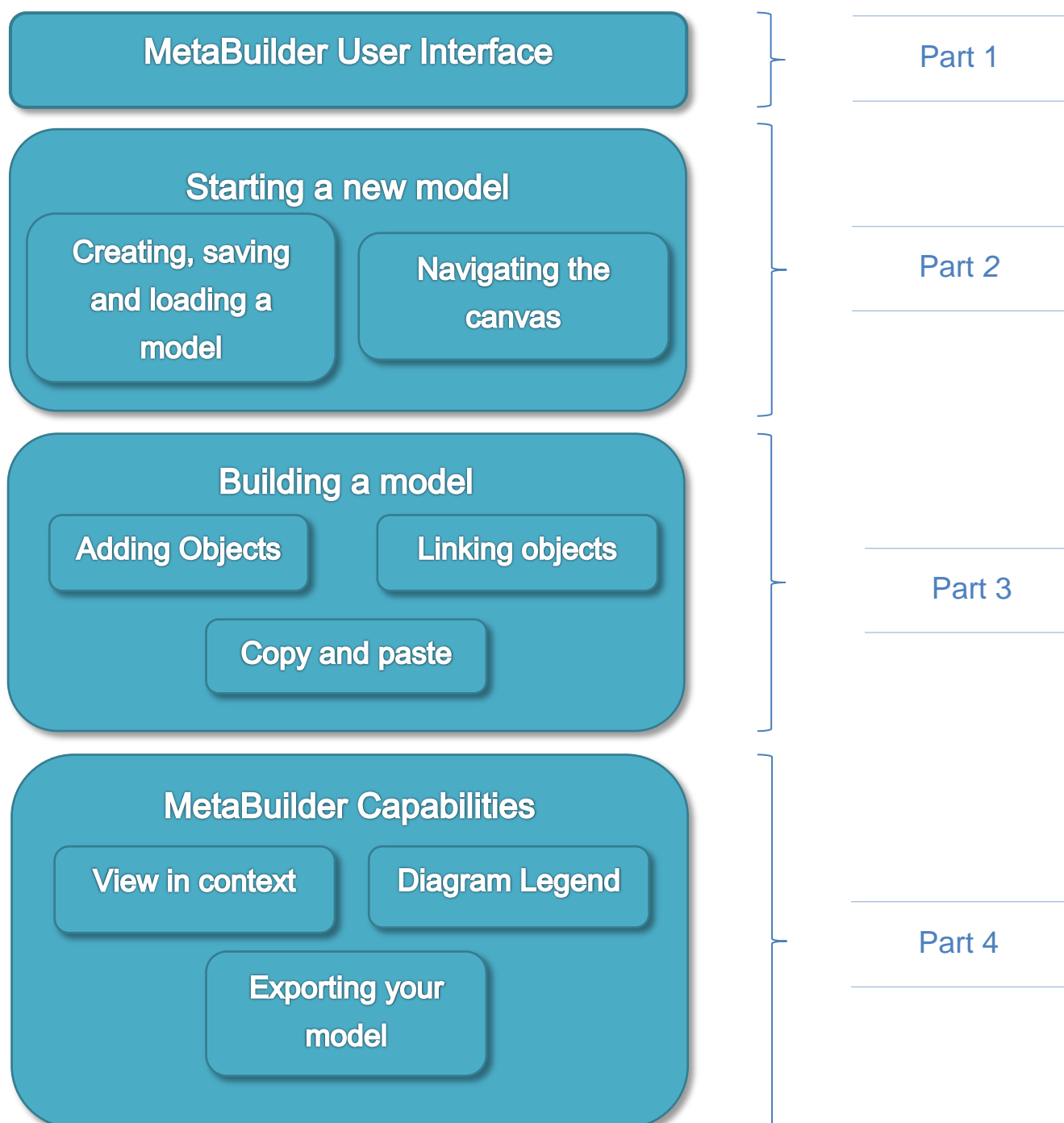
Part 1. MetaBuilder User-interface

The MetaBuilder user interface was designed to display all the relative information whilst still providing sufficient modeling space. The diagram below gives a representation of the complete work area. The interface is divided into the utility bars which are the Menu, Tool, Format and Status bars and then the Panes which include the Stencil Pane, the Properties and Task Pane and the Canvas Pane.
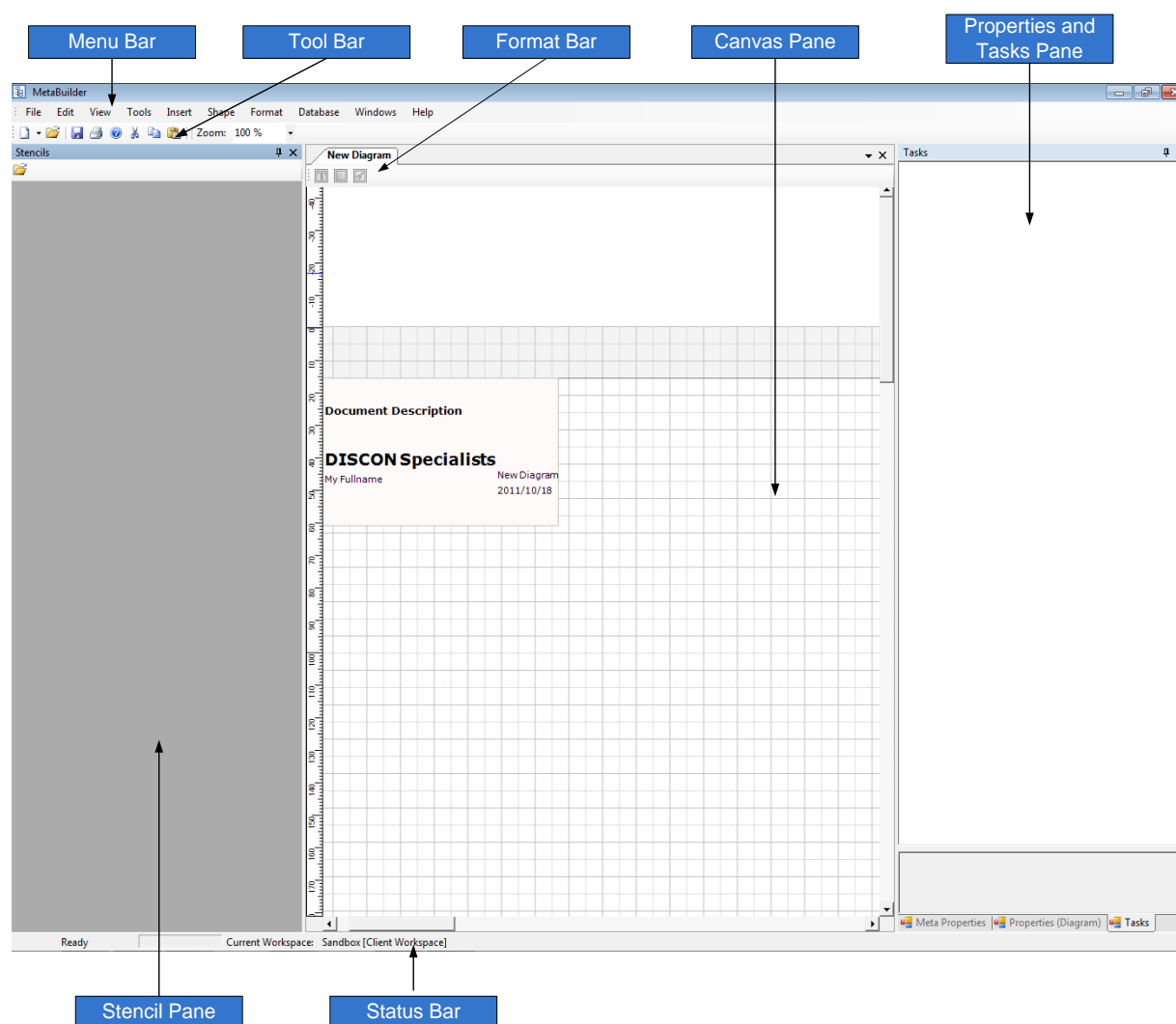

Figure 1 MetaBuilder workspace

The Menu, Tool, Format and Status bar

These utility bars are dynamic, and available options change depending on the usage status of the application at the given point in time or depending upon the object selected.

Menu bar

The Menu Bar is used to access most of the functionality provided by MetaBuilder.

Format bar

The Format Bar allows for easy access to the textual and visual formatting of objects.

Tool bar

The functions available on the Tool Bar are used to perform certain actions when a diagram is open, such as New, Open, Save, Print, Help, Cut, Copy, Paste and Zoom.

Status bar

The Status Bar is a horizontal bar at the bottom of the application that displays information about the current condition of the program, such as the Current Workspace and the Saving Progress.

The Stencil- Properties- Task- and Canvas Pane

Stencil Pane

The **Stencil Pane** contains all the stencils that can be used during modelling. The stencils are grouped in stencil sets according to the various modelling techniques and stored inside the database. The **Open** 🗁 function will open the symbol store from where the required stencil set can be selected. The available stencils for the selected modelling technique will be displayed in the work area of the Stencil Pane. The width of the Stencil Pane can be altered by positioning the mouse pointer on the right-hand edge of the Stencil Pane and dragging the pane to the required size.

Canvas Pane

The Canvas Pane is the primary work area upon which models are created and maintained. When a new diagram is created or an existing diagram is opened, it is displayed within the Canvas Pane.

Properties and Task Pane

The Properties Pane displays the properties of any object selected on a diagram and has three views. The views include the **Meta** Properties, **Properties** (Diagram) or the **Tasks tabs**. The Properties Pane can be **Closed** (✖) or **Docked** (📌) by using the appropriate buttons in the top right-hand corner of the pane.

The **Properties (Diagram)** present the user with all the properties regarding the appearance and behaviour of the selected object except for the values of attributes that were defined in the Meta model.

The **Meta Properties** present the user with the values of attributes for an object as defined in the Meta model. All values for the object are editable in the Meta properties. An example of the Meta properties is shown in Figure 2

Also located at the Properties Pane is the **Tasks Pane** The Tasks Pane displays a list of tasks when a duplicate object is created. When double-clicking on a task the Merge Objects dialog is displayed this allows you to manage duplicates within your diagram and repository.
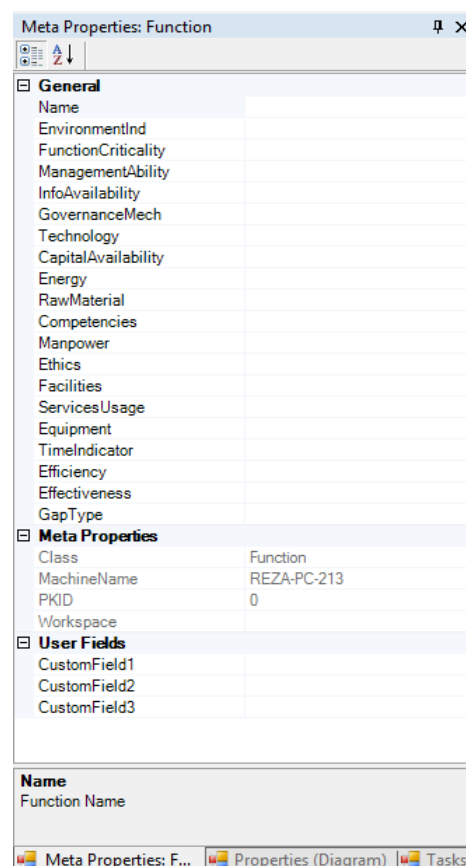

Figure 2 Meta properties

Part 2. Starting a New model

Now we will discuss how to open a new diagram, load an existing diagram and save active diagrams. Once you have a model open, it is also necessary to know how to navigate around the modeling area called the Canvas Pane.

Creating, Saving and Loading a model.

Choose a Workspace

Firstly it is necessary to choose a **Workspace.** Workspaces are used to group related diagrams and objects together and make it easier to find related diagrams at a later stage. Objects in different workspaces are visible to each other which mean that associations can be added between objects residing in different workspaces. MetaBuilder will have 'Sandbox' selected as the default workspace. Simply select the Workspace in which you would like to create your model or create a **New** workspace.
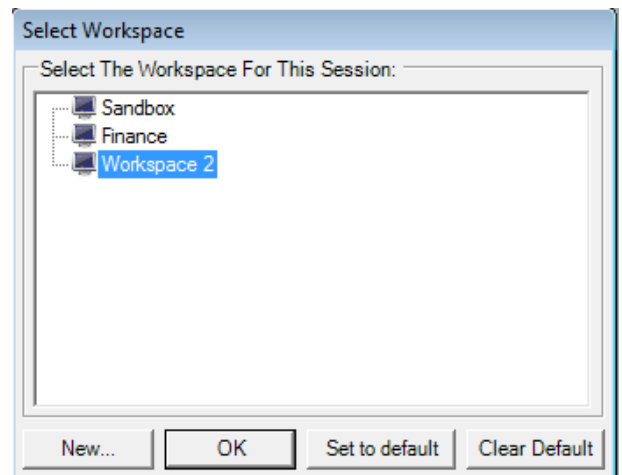

Figure 3 Selecting Workspace

Create a new diagram.

The **New** 🗋 function, found under 'File' in the Menu bar or from the tool bar, is used to create a new diagram. When the **Diagram** function is selected, a new empty diagram is displayed in the Canvas Pane. The New function is also presented on the tool bar for quick access.

Open an existing diagram

The **Open** 📂 function, found under 'File' in the menu bar or from the tool bar, presents the user with the **File Open** dialog. The dialog defaults to the **Diagrams** folder within the MetaBuilder directory which is the default folder for storage of diagrams created in MetaBuilder. Other directories may also be browsed to select the required diagram files. Multiple files can be selected and opened simultaneously.

Saving your Diagram

When selecting the **Save** 💾 function, found under File in the menu bar or from the tool bar, you will be presented with

Figure 4 File functionality

the **Save Diagram** dialog if the diagram has not been saved previously. Give your diagram a name and choose the directory where you would like to save it. If you have saved your Diagram before and would like to save it under a different name, select the **Save as** option also found under 'File'. By default MetaBuilder does auto-save diagrams that can be retrieved in the case of MetaBuilder closing incorrectly.
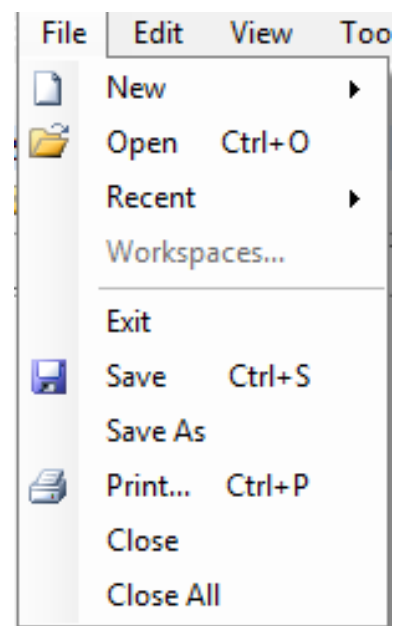
Navigating the canvas.

After creating or opening a diagram you now have the diagram visible in your Canvas pane. For easy access there will be a Diagram tab for every diagram that is open. This will be the platform on which you will have the capability to add objects and create your specific model.
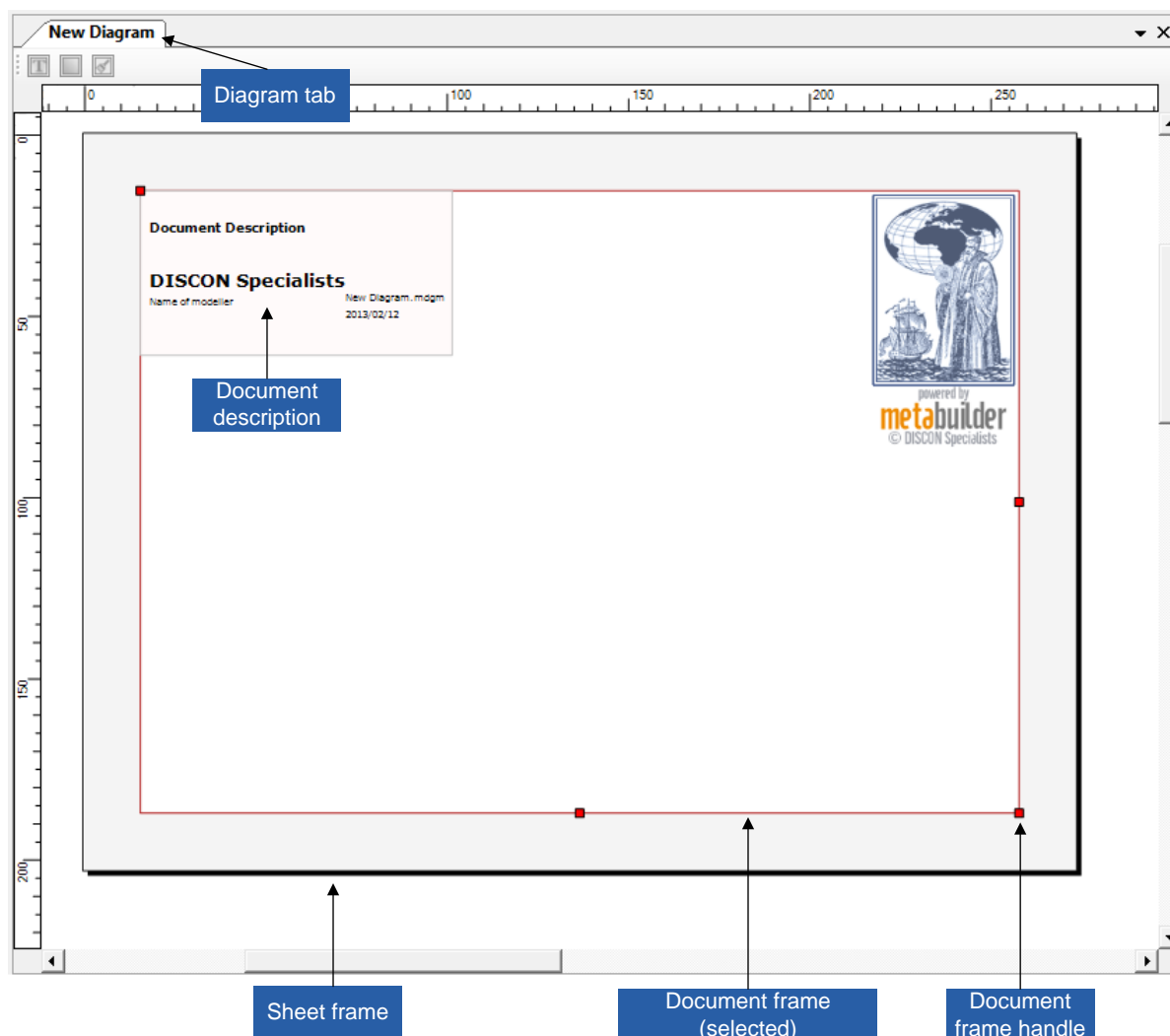

Figure 5 Canvas Pane

Document description

Once you have the correct diagram selected you can change the document description of the diagram by double-clicking on the text field that you would like to change. MetaBuilder will automatically add the last modified date.

Scrolling, panning and zooming

To **scroll down or up** use the roller on your mouse, to **pan left or right**, hold the 'Shift'-key and then use the mouse roller. You can also move around by using the arrow keys, but only if nothing is selected. To **zoom** hold the 'Ctrl'-key and scroll with the mouse roller.

To see the entire document select the **Whole Page** option found under 'View'>'Zoom' in the Menu bar

Resizing the document frame

To resize the working sheet double-click on any blank space on the document to select the document frame and then drag the document handle until the document is the preferred size. After resizing the document frame you need to crop the sheet to fit neatly around it. In the Menu bar under 'Tools' There is either an option to crop the sheet to the **Document Frame** or to crop the document frame **to the sheet.**
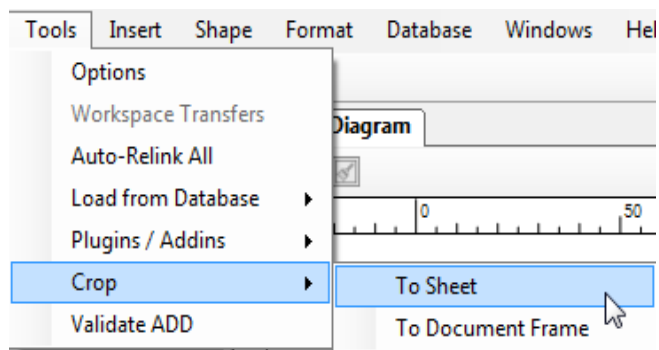

Figure 6 Crop document frame

Part 3. Building your model

To start building a model it is first necessary to select the modeling technique that you would like to utilize. Graphical modelling is enabled by shapes which represent predefined classes in the MetaBuilder repository and connectors that link these shapes. The shapes are presented in subject grouped stencil sets which can be dragged and dropped onto a canvas to construct the required model. The allowed relationships between shapes, represented in a model by connectors, are controlled by rules encapsulated within the Meta model.

Adding objects

Stencil objects represent Enterprise Architecture classes like business functions or data entities. In the stencil pane click open to have the Stencil Store opened. From here choose the modeling technique that you would like to apply in order to have the applicable shapes, or objects, loaded into the stencil pane.
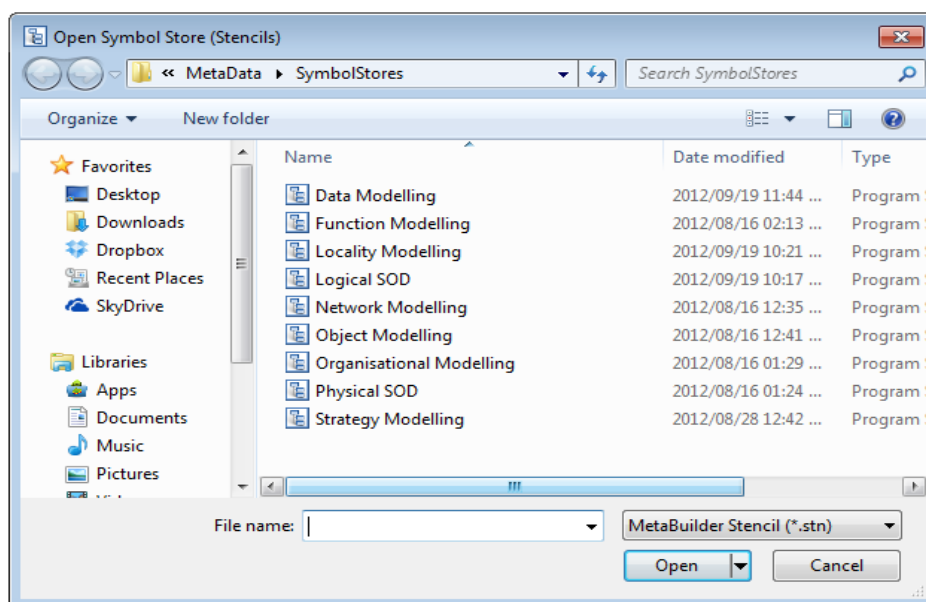

Figure 7 Stencil store

Dragging objects onto the Canvas

To add an object to the canvas drag the required object from the stencil pane to the canvas and drop it where you would like to have it placed. It is also possible to select multiple stencils shapes from the pane with the 'Shift' or 'Ctrl' keys and then drag them to the canvas.
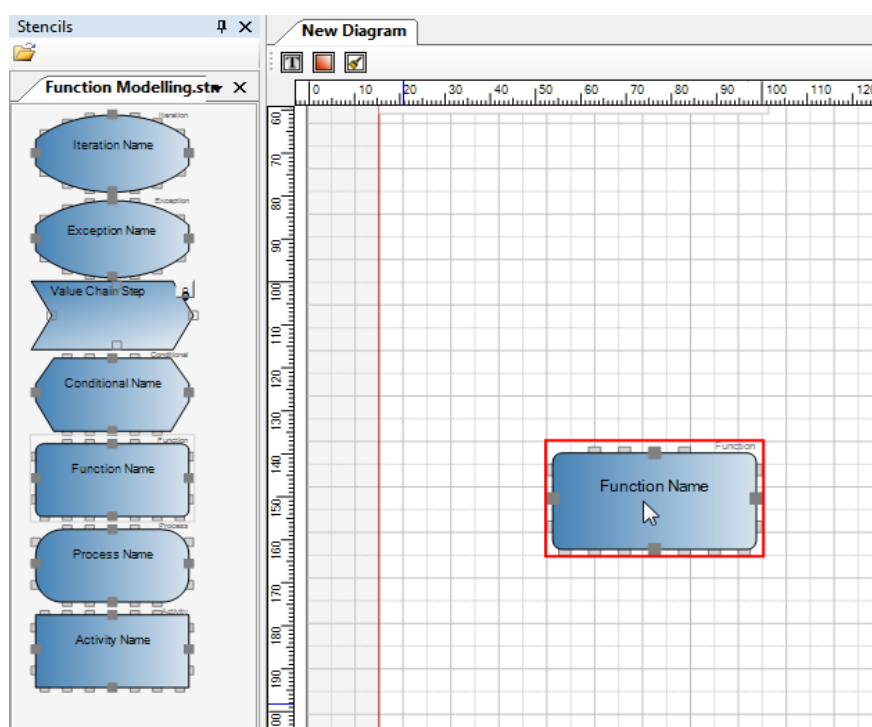

Figure 8 Dragging objects from Stencil pane

Loading an object from the database

If an object exists that has been created on a different, or previous version of this diagram, and has been saved to the database it is also possible to add this object to the canvas by selecting the '*Tools*'> '*Load from Database*'>'*Select objects*' option. The **'Object finder'** will appear that will allow you to search the database and load one or multiple objects onto your active diagram.
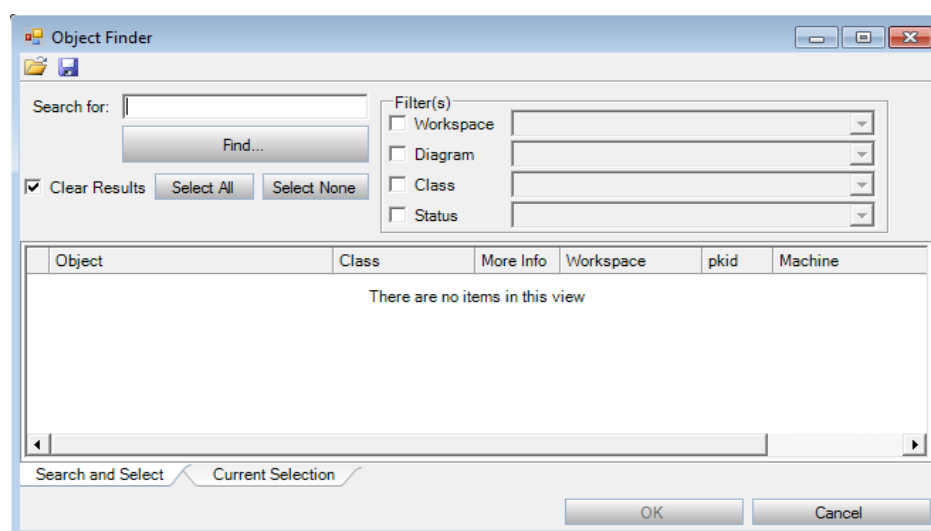

Figure 9 the Object finder

Connecting objects

When you create connections between stencil objects, these links are known as **associations**, these associations show the relationship between objects. To connect objects simply click and hold any one of the ports on the outside boarder of the object and then drag the link to any other port on a different object. If the association between the two separate objects is allowed, the connection will be created. After objects have been connected, the connections will remain intact even if objects are moved around on the canvas.
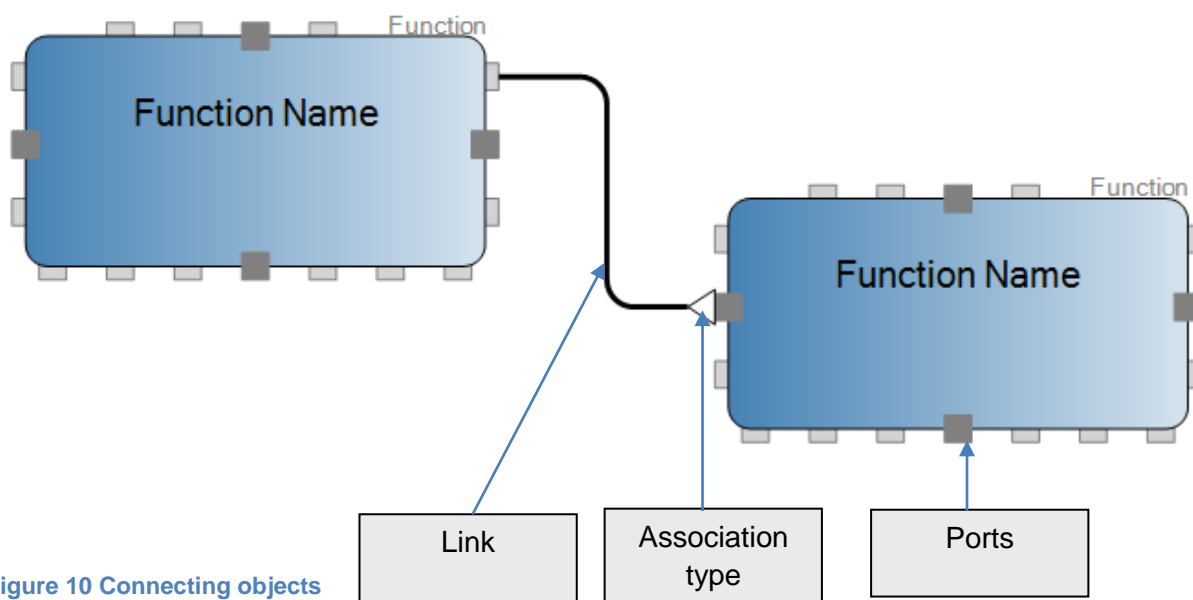

Figure 10 Connecting objects

Using the Quick-Panel

When you select a stencil object on the canvas a Quick panel will appear on the right hand side of the object. The Quick panel has five buttons that each has its own function panel and exists to aid the user with faster modelling.
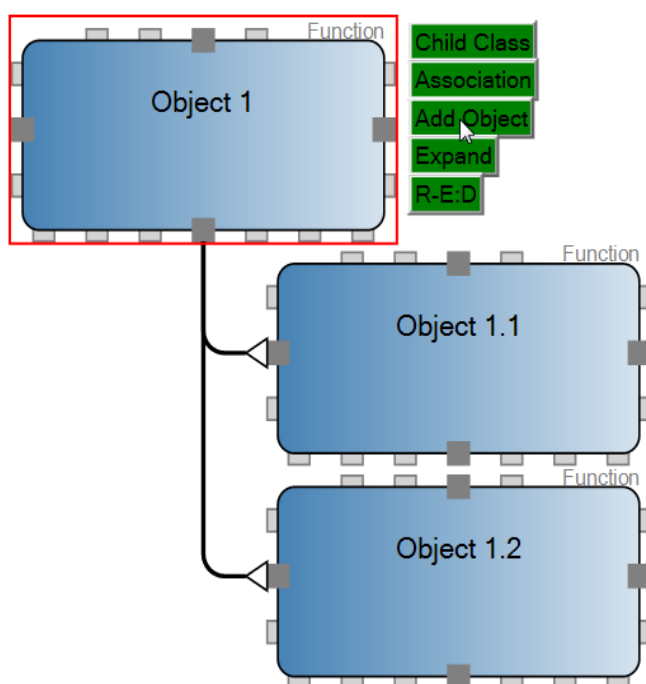
Step 1. Firstly choose the '*CHILD CLASS*' that should be added if the default option is different to what is required.

Step 2. Then set the link between objects by clicking the '*ASSOCIATION*' button and choosing from the allowed list that appears.

Step 3. When you click the '*ADD OBJECT*' button the specified child object is added. It will be positioned in a general right hand side decomposition layout and linked to the originally selected object using the specified association.

Figure 11 Quick panel

Copy and Paste

It may be required to have two separate representations of the same stencil object. It is possible to copy and paste all selected shapes in MetaBuilder. You can also paste objects across diagrams.

Copy

The Copy ⎙ function duplicates all selected objects on the canvas onto the clipboard. When objects are copied, they remain available in their original location. The Meta properties will be copied with the object but not the PKID. The PKID is the unique identifier that specifically identifies and differentiates all objects. The Copy function is also presented on the tool bar for quick access, unless no diagram is open in the Canvas Pane.

Paste

Before we discuss the different ways to paste an object, it is first necessary to differentiate between a **Shallow Copy** and a **Normal Copy.**

Shallow Copy

The **Paste Shallow Copy** function places a shallow copy of an object from the clipboard onto the current canvas. A shallow copy is an exact representation of an object with the same PKID and can be used to have two shapes on a diagram point to the same instance of an object within the Repository. Shallow copies can be created across diagrams. Both the original object and the shallow copy will receive a shadow to indicate that a shallow copy exists for the object. If the object's properties are modified both shapes will reflect that change immediately.

Figure 12 Normal and Shallow copy

Normal Copy

A normal Copy will have the same Metaproperties as the original object, but as soon as the diagram is saved this object will receive a new PKID. This makes it a different object when considering the Repository even though it has the same name. Changes made to a normal copy will not affect the original object and vice versa.

Ways to copy and paste

1. **Ctrl-C and Ctrl-V** Will create a normal copy of the selected objects
2. **Right click copy and paste** Will Create a Normal Copy
3. **Right click > 'Create Shallow copy'** Will create a shallow copy of the selected objects
4. Select objects and then press **F8,** this creates a shallow copy of the selected objects to the clipboard.
5. **Hold Ctrl and drag** selected objects to a new position will create Normal copies.

Part 4. MetaBuilder capabilities

This part will discuss a few of the repository and advanced capabilities that make MetaBuilder such a powerful tool.

View in context

When right-clicking on an object and selecting the **View in Context** function a new tab is opened where the selected object is displayed in context of all the other objects it is connected to. This implies that the selected object is displayed in relation to other objects connected to it **on all diagrams**. Furthermore it implies that no object not connected to the object is displayed in the "View in Context" witch provides the ability to single out concepts or business entities without the complexity of the entire architecture model. View in Context is explained by means of the following example:
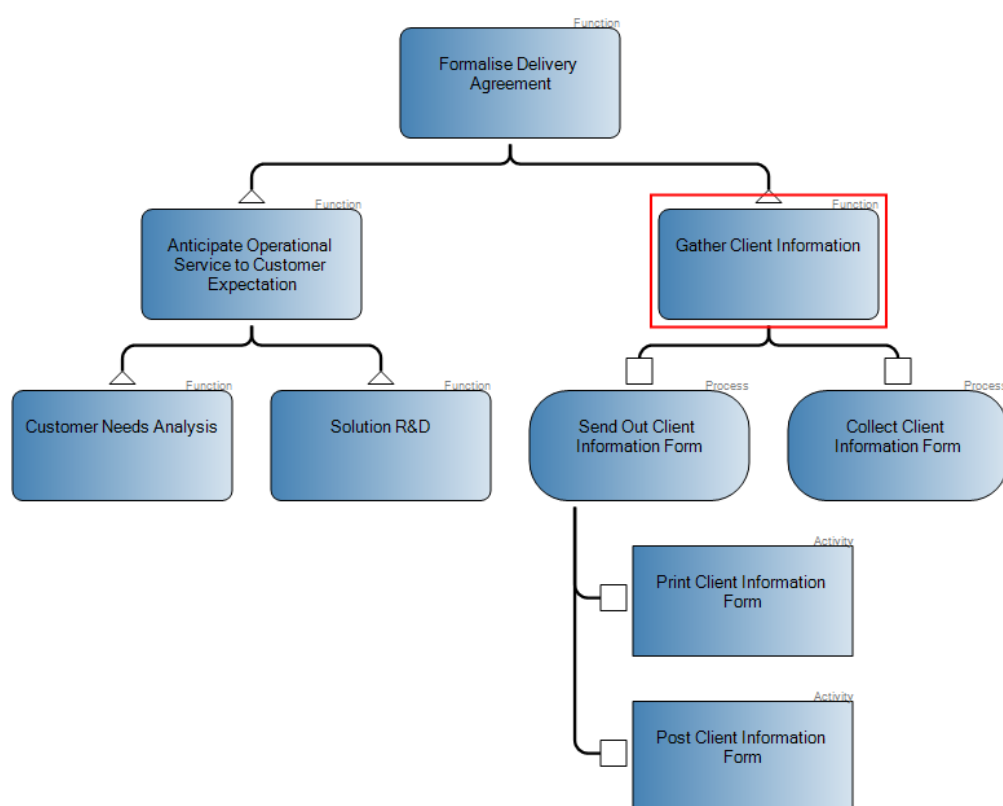

Figure 13 View in Context Example Diagram

The following connections will be shown:

- All Diagrams where this object is found in the repository. Here "View in Context Example Diagram".
- All first level connections that link **to** the selected object. Here "Formalise Delivery Agreement".
- All first level connections that link **from** the selected object. Here. "Collect Client Information Form".
- Below each object name, 'View in context' also indicates what type of class the object belongs to. e.g. "Collect Clien Information Form" is a Process.
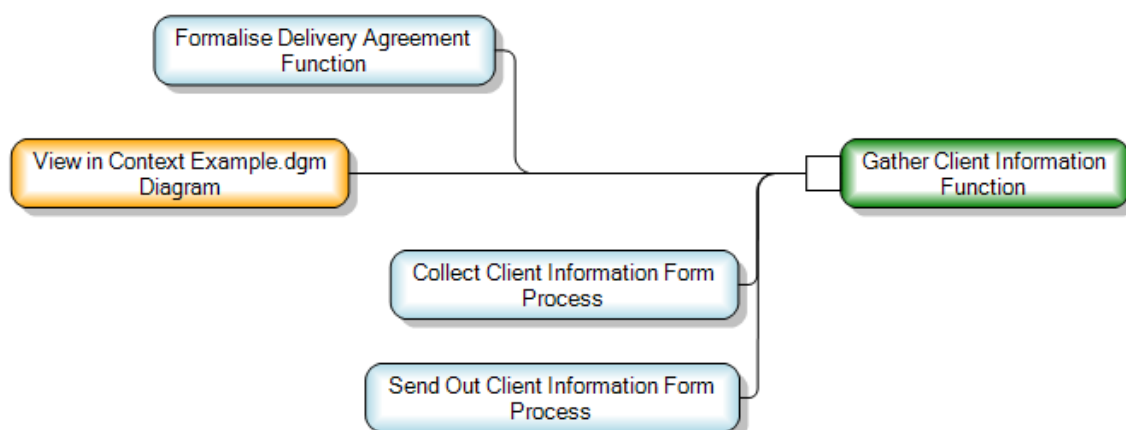
Figure 14 View in context

Whilst viewing in context the user can perform the following actions.

- Reposition the objects to obtain a preferred layout.
- Explode nodes into their tree view by right-clicking on an object and selecting the '**Explode'** function.
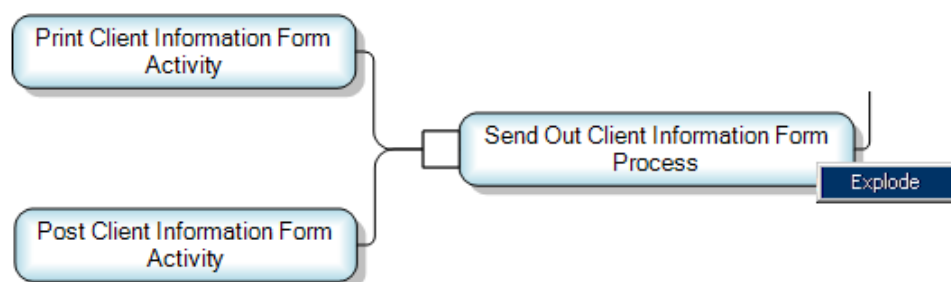

Figure 15 Exploding an object

- Export object information to Microsoft Excel. When selecting the **Explode to Excel** option the user is presented with a Microsoft Excel worksheet with all the object details.
- When the user right-clicks on the View in Context canvas, a list is displayed of all the various classes that is active in the view. The user can now hide all the objects of a certain class by de-selecting the required class from the list. Selecting the class in the list again will display all the objects of that class.
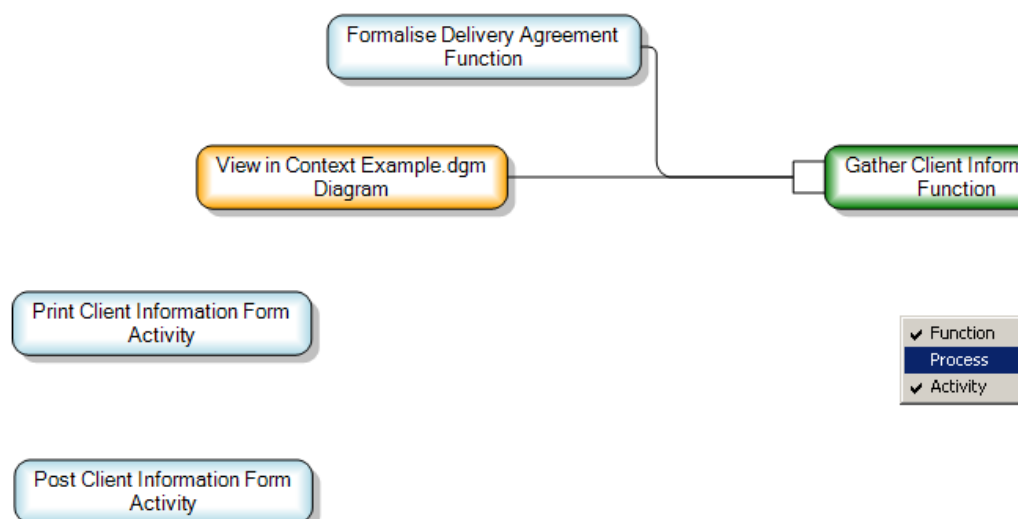

Figure 16 Display /hide object classes.

Adding a legend to your diagram

The Diagram legend is a feature that allows the user to insert a legend into the active diagram. The legend can be set to compile keys in one of three categorisations to represent different groupings of the stencil objects within the active diagram. The three categories are.

- Categorise by Colour
- Categorise by Class
- Categorise by Class and Colour

The legend is found in the Menu Bar under 'Insert'. Apart from the fact that it will be used as a key to describe the meaning of different stencil shapes on the diagram it is also a powerful tool that may be used to.
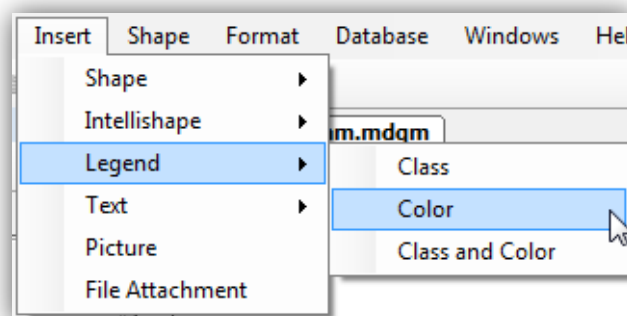
Figure 17 Insert legend

1. Quickly edit the formatting of a selected group of objects.
2. Visually hide and display only the required objects without physically needing to delete the objects.

Step 1.

Firstly choose in what way you would like to display the legend groupings. MetaBuilder can only display one type of legend at a time. This means that if you would like to change the type of legend simply 're-insert' the legend of choice and MetaBuilder will automatically replace and update the old legend with the new legend.
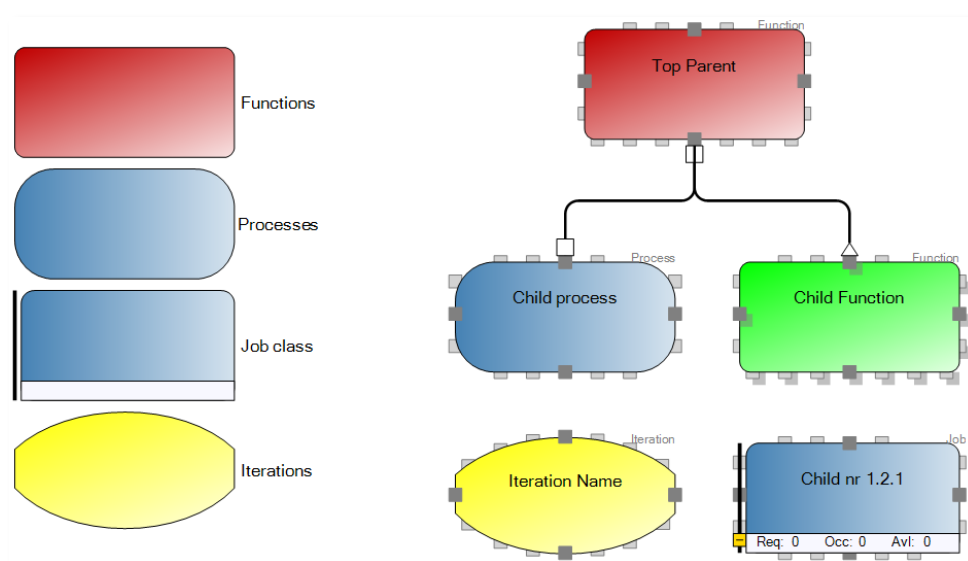
Figure 18 legend categorised by class

Step 2.

Now that the legend has been created the legend itself can be used to interact and change the objects on the diagram. Simply select an object in the legend that represents the group of objects that you would like to change, and change its formatting.

Step 3.

To visually hide objects from your diagram simply double-click on the legend's key that represents the group that you would like to hide and all the objects that relate to that grouping will become invisible. To make the objects visible again, double-click the object and all the objects will reappear.

Exporting your model

All functionality grouped under '**Database'**, '**Export'** in the menu bar will export data from the MetaBuilder database. MetaBuilder can export an Excel Template of a selected class. This Excel template will contain every instance of the specified class with columns for each attribute as defined in the Meta model. Furthermore MetaBuilder can export any hierarchical structured diagram into a raw textual format. Typically this functionality is used to represent *"organisation"* or "*function*" structure diagrams in textual format.
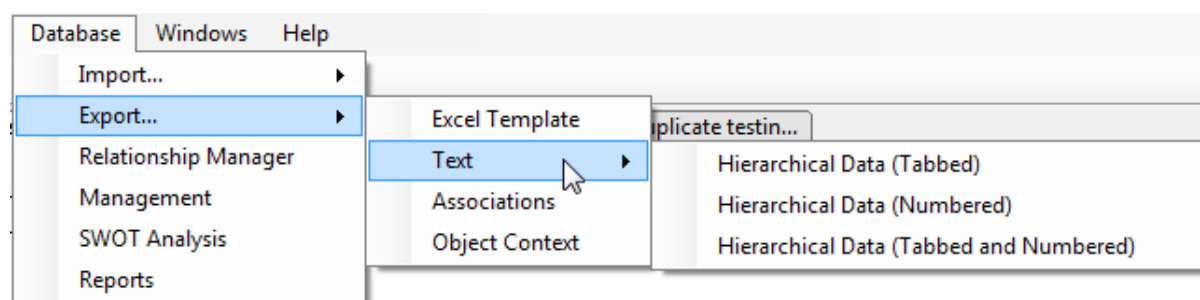

Figure 19 Export functionality from Menu Bar

Exporting data to an Excel template

After selecting 'Excel template' from the Menu Bar you must choose what class you would like to create an Excel template of.

Figure 20 Selecting Class for template

MetaBuilder will then ask whether all the current instances at the specified class should be included in the template. If you choose '**Yes'** every existing objects of the specified class will be included in the template. If you choose '**No'**, an empty template will be created. This template can then be used for mass data imports into the MetaBuilder repository.
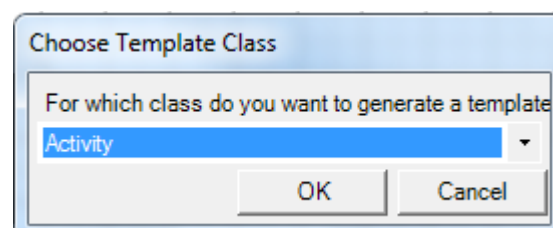
Exporting data to textual format

It might be required to present a hierarchical structured diagram in a textual format. There are two ways to export your Hierarchical structure, firstly by means of right-clicking on a parent object in an active diagram or secondly by using the '*export*' functionality under '*Database*' in the Menu bar and selecting an object from the Repository. (See Figure 17)

The textual export can be done in either of the following formats.

- Tabbed
- Numbered
- Tabbed and Numbered

A textual export by means of right clicking is explained by the following example:

Step 1.Select the object that should represent the top level entity in your textual export tree.
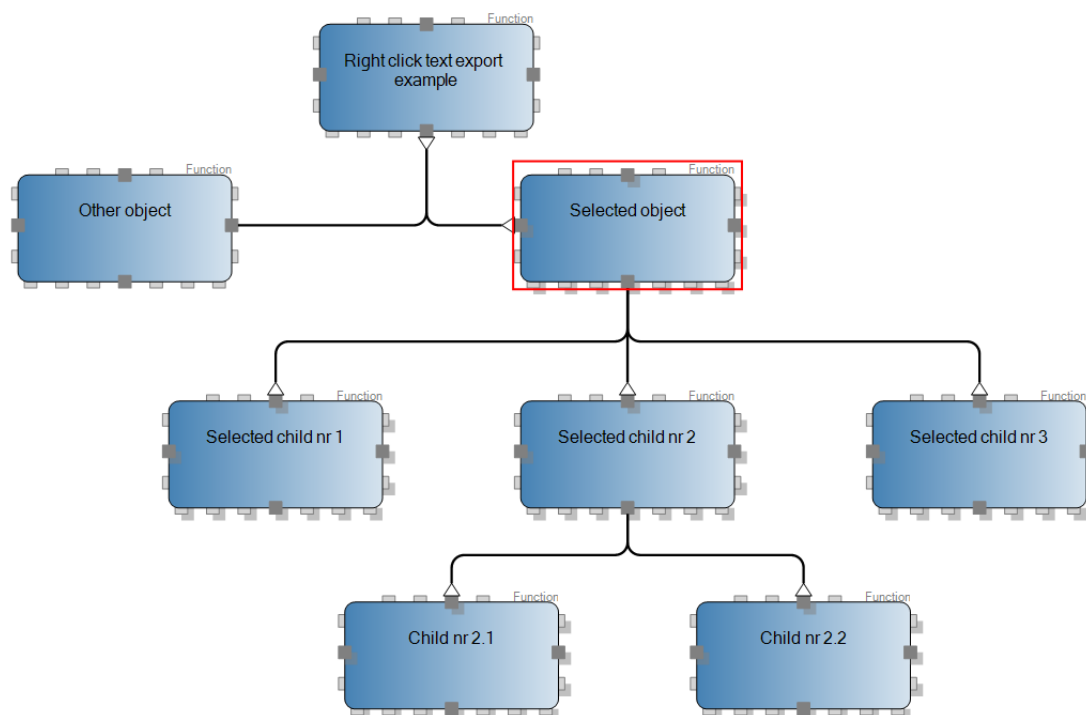

Figure 21 object selected in tree

Step 2

Right click and choose the preferred format in which the export should be displayed.
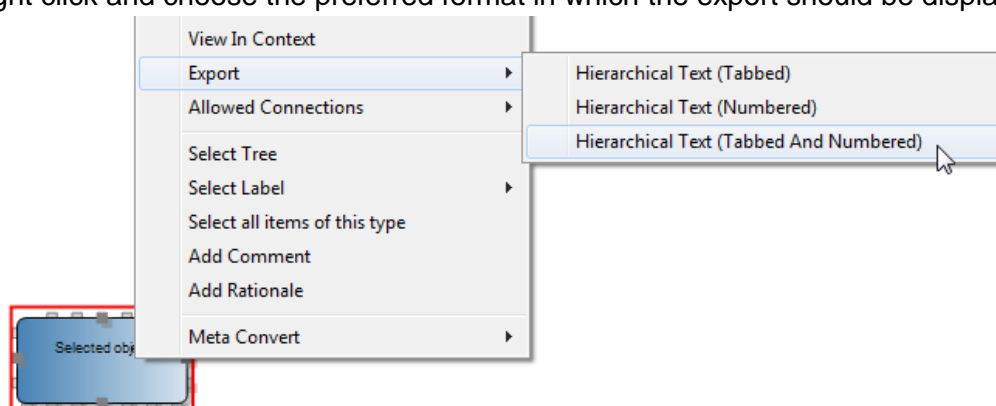

Figure 22 Right-click textual export

Step 3.

MetaBuilder will automatically open a Notepad representation of the hierarchical structured tree. For this example the Tabbed option was selected.
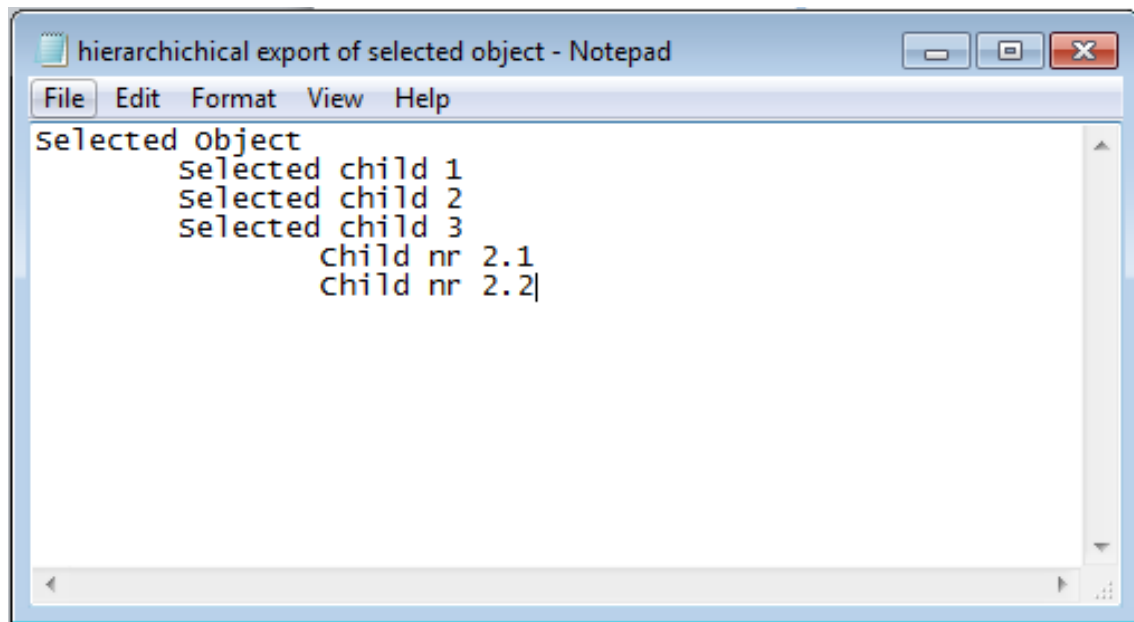
Figure 23 Tabbed textual export

Part 5. Shortcuts

This table contains a list of all the MetaBuilder Shortcuts that can help to access some of the functionality faster and aid in the modeling process.

Shortcut	Action
F3	**Opens the Find Text dialog**
F4	**Place the focus on the selected object's shallow copy**
F5	**Refresh the attribute / columns of a shallow copy of a composite shape such as a Data View, Entity and Table. Items to be refreshed must be selected first.**
F6	**Force an Auto Save**
F8	**Multiple shallow copies. Place a shallow copy of the selected object(s) in the clipboard. Ctrl + V to paste.**
Ctrl + F4	**Close the active diagram**
Ctrl + A	**Select all shapes on the canvas**
Ctrl + C / Ctrl + Insert	**Copy selected shapes to the clipboard**
Ctrl + O	**Opens the Open Diagram dialog**
Ctrl + P	**Opens the Print Preview dialog**
Ctrl + S	**Save Active Diagram**
Ctrl + V / Shift + Insert	**Paste the clipboard content**
Ctrl + X / Shift Delete	**Cut to the clipboard and mark the Selected Object for Delete**
Ctrl + Y	**Redo**
Ctrl + Z	**Undo**
Ctrl + Drag (Left Mouse Button)	**Copy selected shape(s). *Release Left Mouse button before Ctrl***
Ctrl + Scroll Up/Down	**Zoom In/Out of the active Zoom view**
Shift + Scroll Up/Down	**Pan Left and Right in the Zoom View**

Crtl + Space Bar + Right Click on Name	**Start Typing in Object - Crtl + Space Bar - List all Possible Names in Database of the selected class - Select Required Name - Right Click - Creates a Shallow Copy**
Crtl + Space Bar + Double Left Click on Name	**Start Typing in Object - Crtl + Space Bar - List all Possible Names in Database of selected class - Double Left Click on the required name - Creates a duplicate of the object**
Arrow Keys	**Nudge shapes (Ctrl + Arrow keys for bigger nudge)**
Shift + Drag (Left Mouse Button)	**Move selected shape(s), Horizontally or Vertically**
Ctrl + Shift + Drag (Left Mouse Button)	**Copy selected shape(s), Horizontally or Vertically.** *Release Left Mouse button before Ctrl*
Ctrl + Shift + Left Mouse Button	**Centre view where clicked**
Ctrl+TAB	**Next Document**
Ctrl+Shift+Tab	**Previous Document**