

# **CREATING AND USING MDG TECHNOLOGY IN ENTERPRISE ARCHITECT**



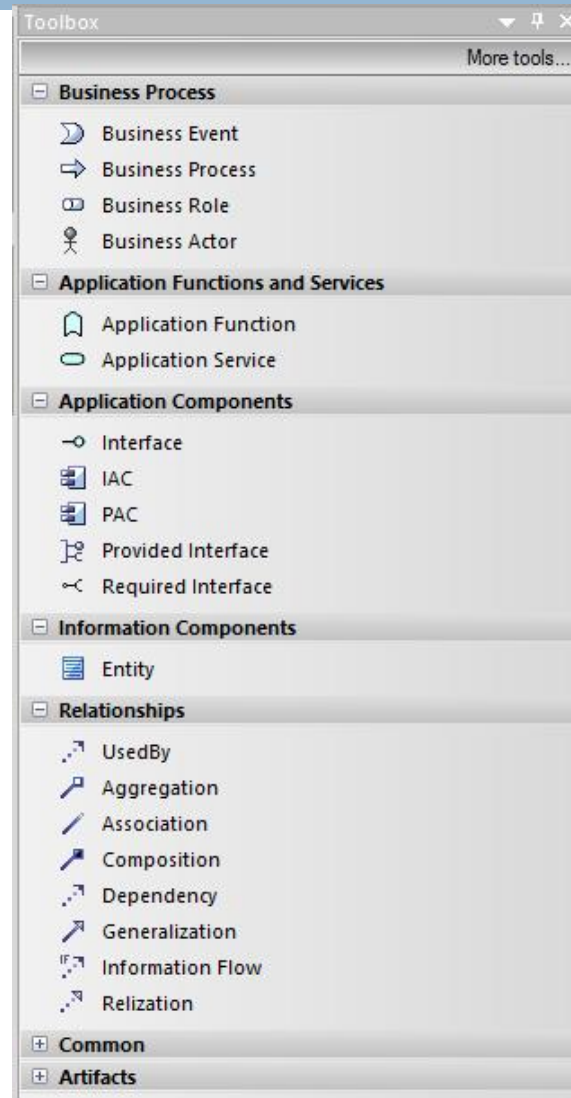


# Defining Profiles

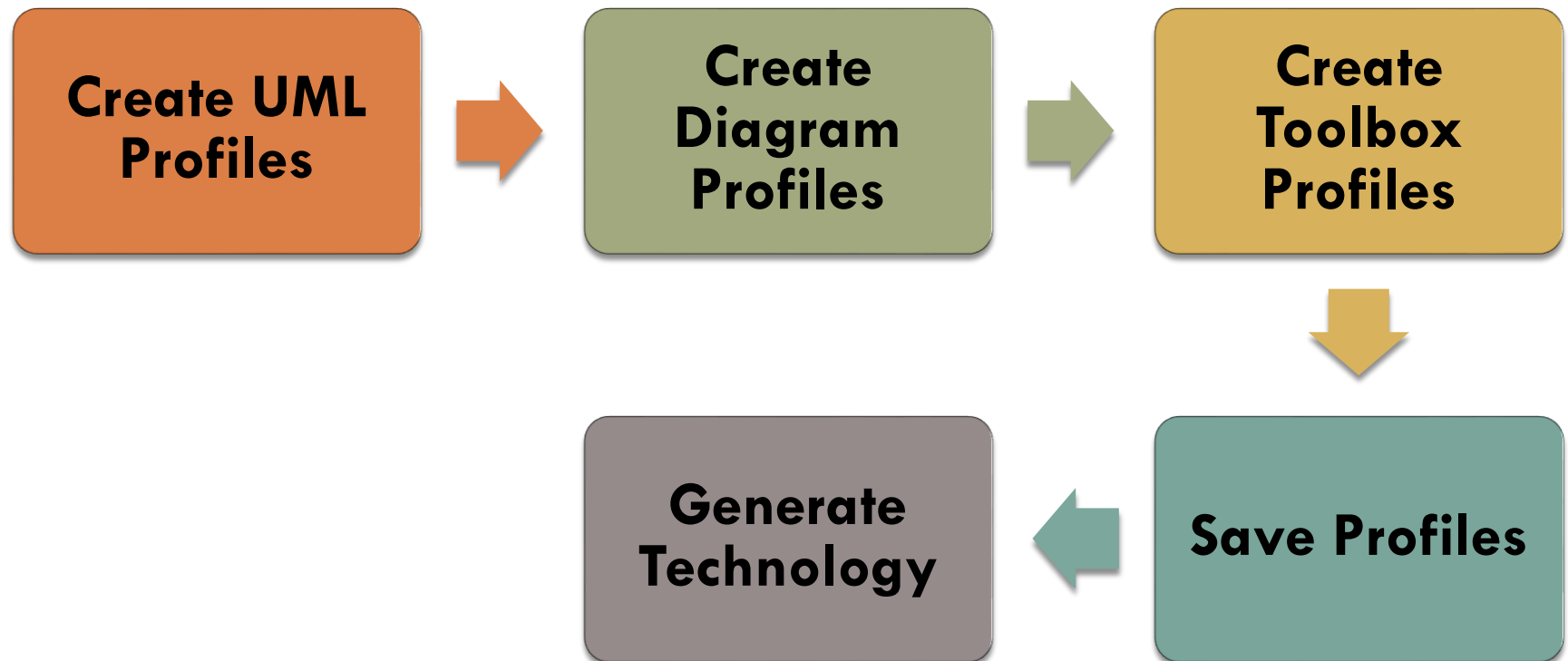
# Introduction to Profiles

- Profiles are collections of extensions (stereotypes)
- These could be collection of element extensions, connector extensions or feature extensions.
- The stereotypes can have specific tagged values assigned to them to capture metadata.

# Profile Elements Sample



# Defining Profiles for Technology

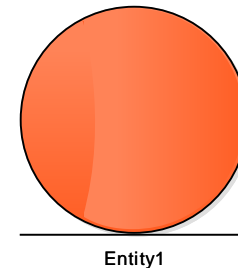
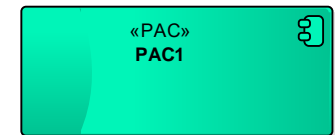


# Stereotypes

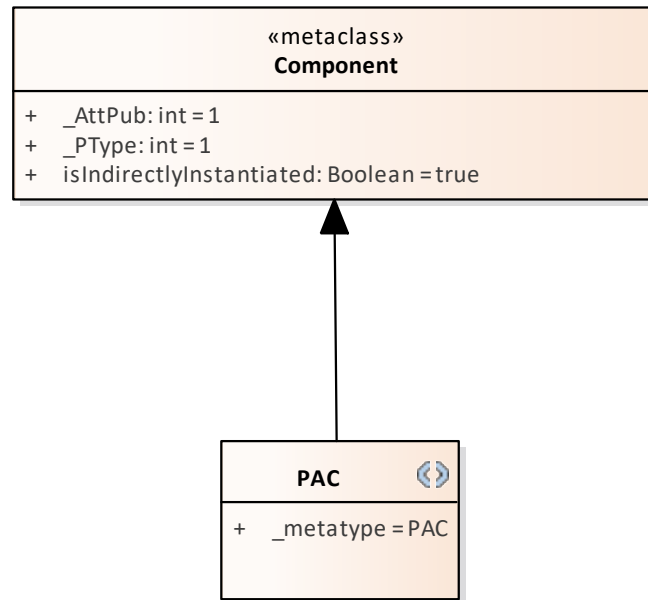
Each Stereotype defined in a profile modifies the Metaclass

These modifications may include:

- ▣ Tagged Values to provide additional properties
- ▣ Overall appearance of the new object
- ▣ Default appearance of the object, such as Background, Border and Font colors
- ▣ Special attributes that define specific appearance and behavior of the new object



# Extending 'Component' metaclass

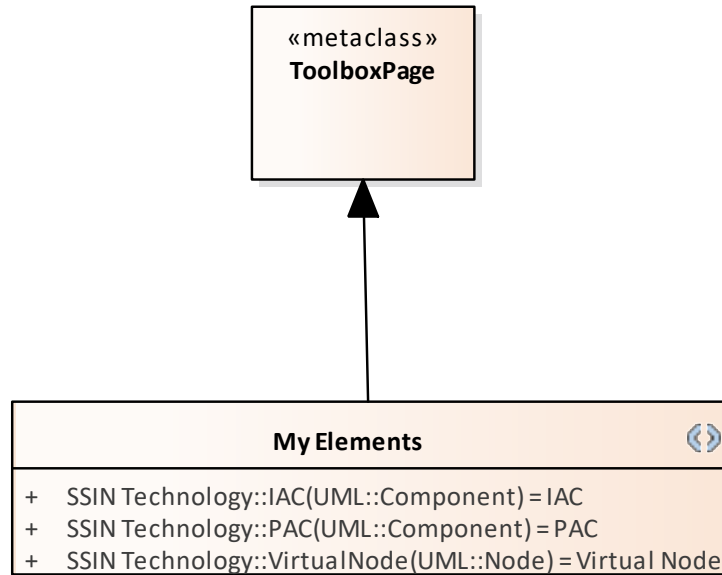


# Toolbox Page

- A Toolbox Profile is a mechanism for creating Custom Toolboxes. A Custom Toolbox provides quick access to profile elements relevant to a given diagram type.
- A Custom Toolbox consists of a number of compartments or Toolbox Pages, and each Toolbox Page consists of one or more Toolbox Items.



# Toolbox Page

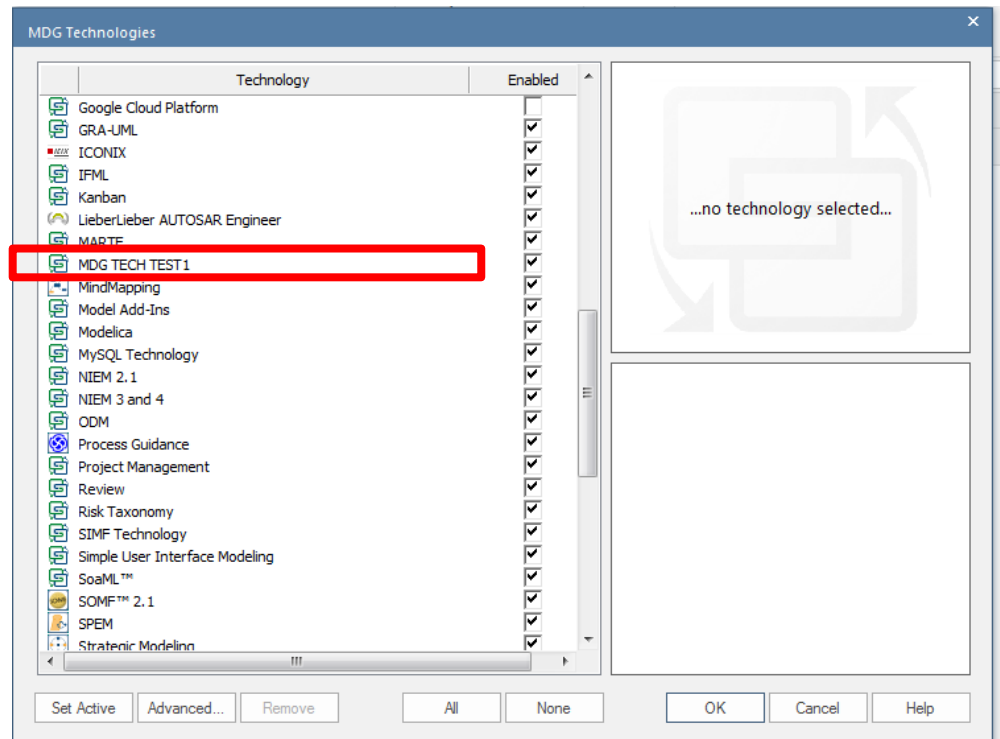


# Extending Diagram

Custom Diagram Types can be linked to a Toolbox Profile that will provide quick access to the specific modeling constructs.

This greatly simplifies modelling

E.g. TA diagram  
-> Opening up  
“Technology  
Architecture”  
Toolbox

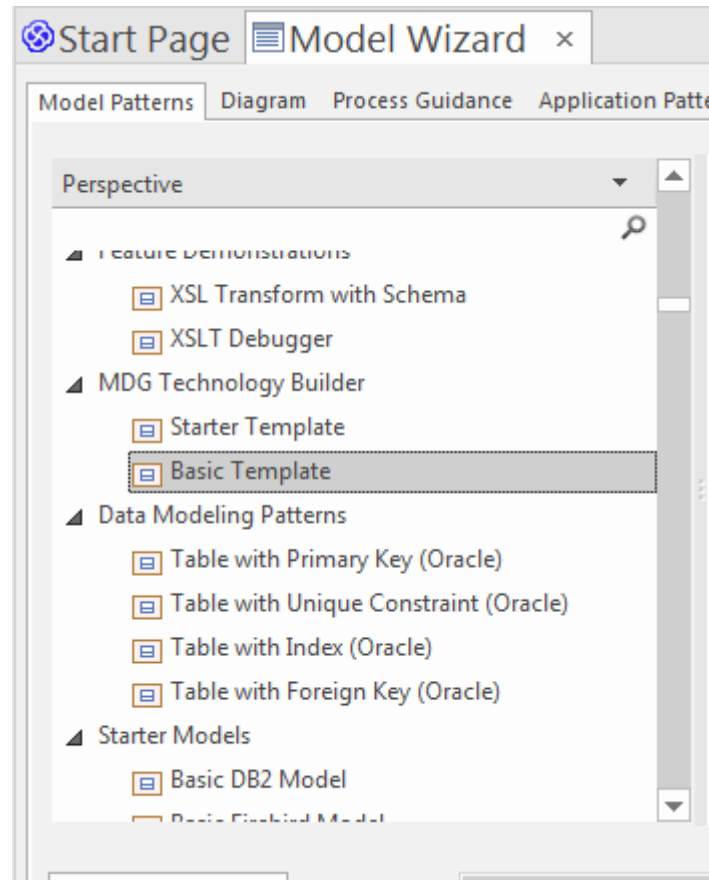


# Defining MDG Technology using Profile Helpers

## Access

New Model Wizard (Ctrl+Shift+M) | MDG Technology Builder | Basic Template

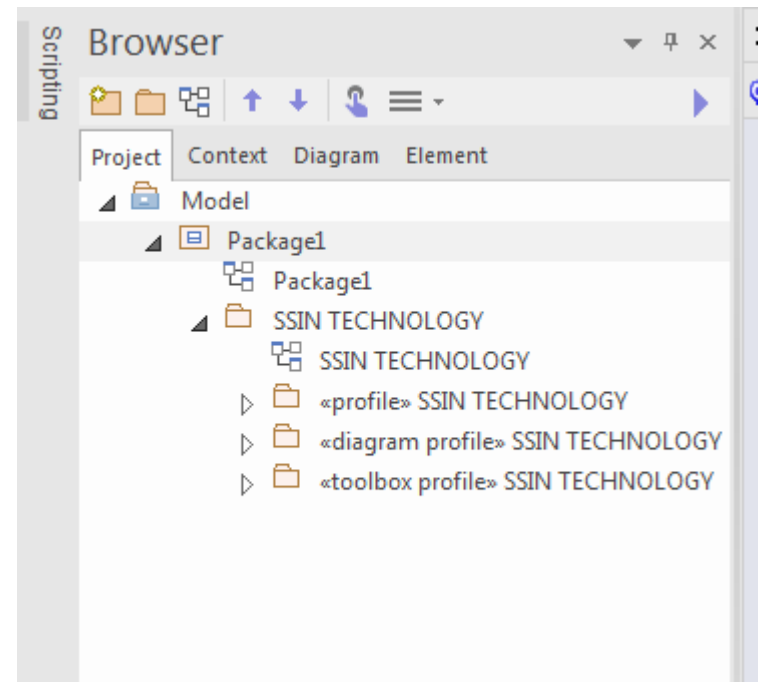
This will create a basic template of packages and example elements



# Basic Template (Model Wizard)

The template includes three packages, each having the same name as the technology but a different stereotype corresponding to the type of Profile they each define:

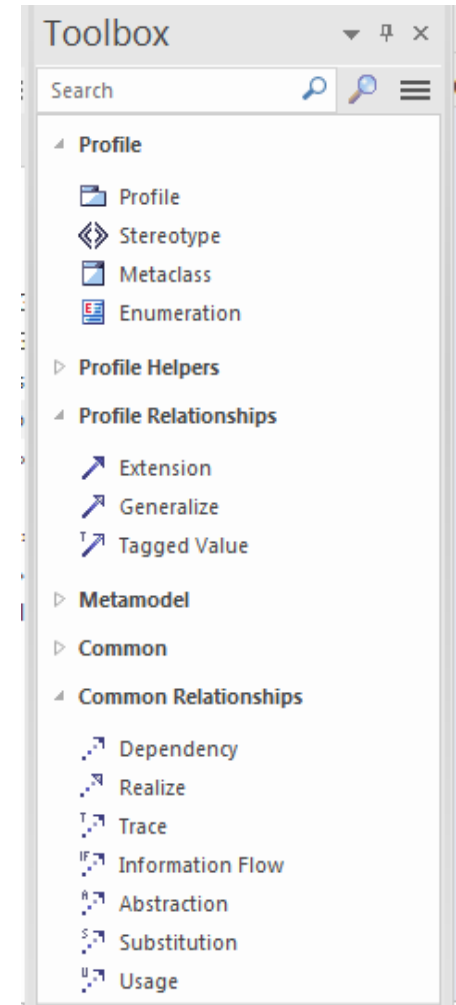
- <<profile>>
  - ▣ package for defining a profile containing the stereotypes users will apply to elements
- <<diagram profile>>
  - ▣ package for a profile describing the diagram types users will create
- <<toolbox profile>>
  - ▣ package for a profile describing the elements to show in a toolbox



# Profiles

## Profile Toolbox

- Profile Toolbox is used in creating Profiles for extending UML models.
- Profiles can define custom Stereotypes, Shapes, Tagged Values, Diagram Types and Toolboxes.
- Set of Profile Helpers within toolbox that provide templates and dialog, helps to create UML Profiles, Toolbox Profiles and Diagram Profiles within an MDG Technology.



# Profile Helpers in Toolbox

## Profile Helpers

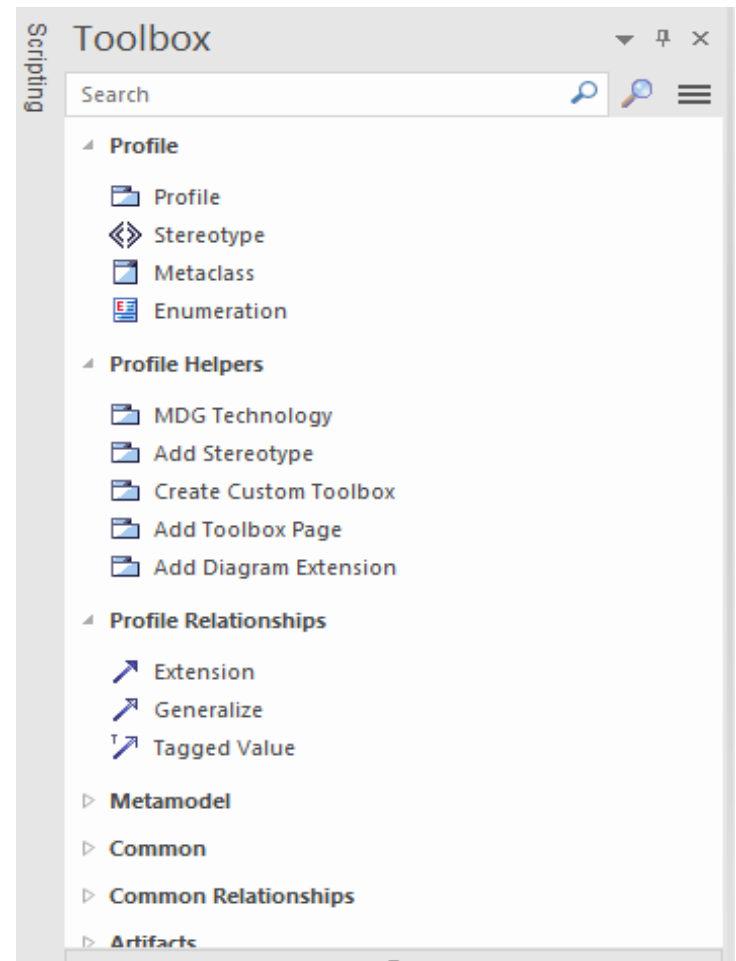
**MDG Technology:** An MDG Technology package to contain Profile definitions.

**Add Stereotype:** Add Stereotypes and Metaclasses within a UML Profile.

**Create Custom Toolbox:** A customized Toolbox Profile

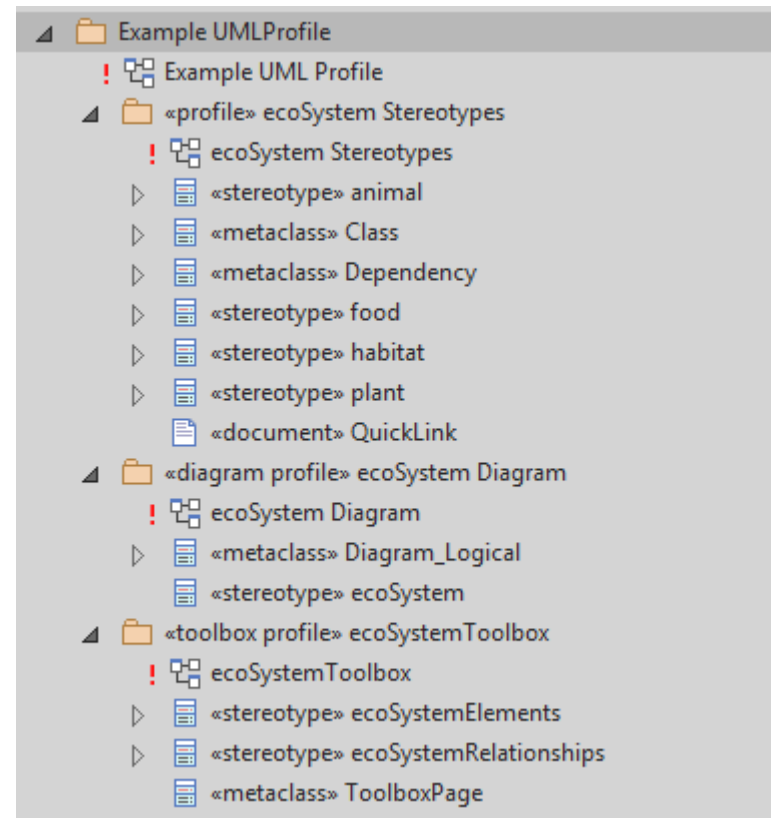
**Add Toolbox Page:** Toolbox pages within the customized Toolbox

**Add Diagram Extension:** A Diagram Profile to define an extended diagram type



# Define UML Profiles

- ❑ Open the diagram in the newly created <<profile>> package.
- ❑ Select the 'animal' stereotype given as a sample
- ❑ Right click and choose "Edit with Profile Helper"



# Using the “Profile Helper-General Tab”

**Name :** Enter / Modify the name of the profile

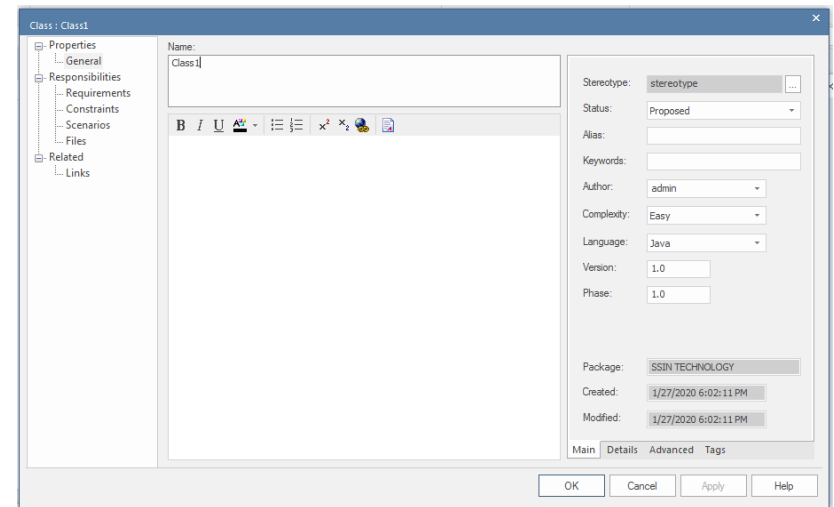
**Type :** Select the Type of extension

**Add Metaclass:** Select the UML Class that need to be extended

**Click on the OK button** you update the changes.

*Note :*

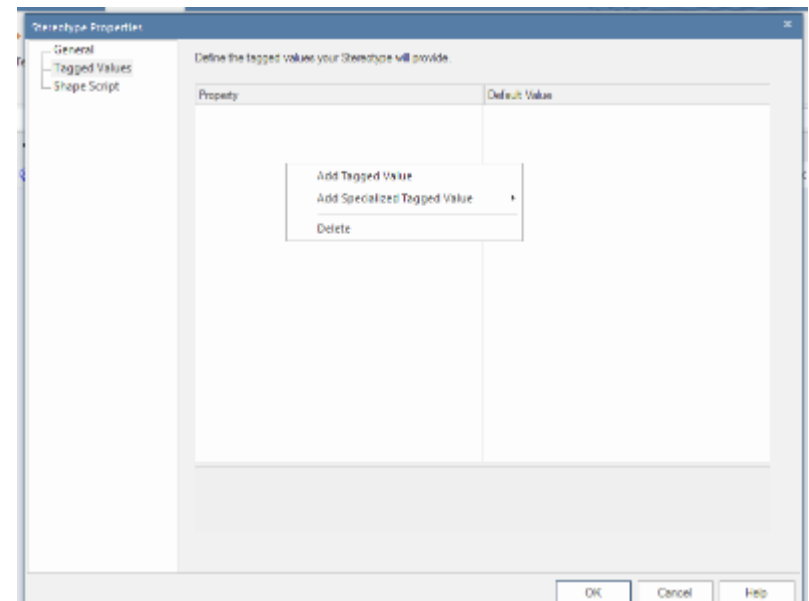
*The data displayed in the Add Metaclass window varies based on the Selection of “Type”*





# Using the Profile Helper-Tagged Values Tab

- Click on the Tagged Values Tab
- Right Click on the screen to select/add the Tagged Values
- Use the Predefined option to select the existing Tagged Values



# Saving Profiles as XML

## Access

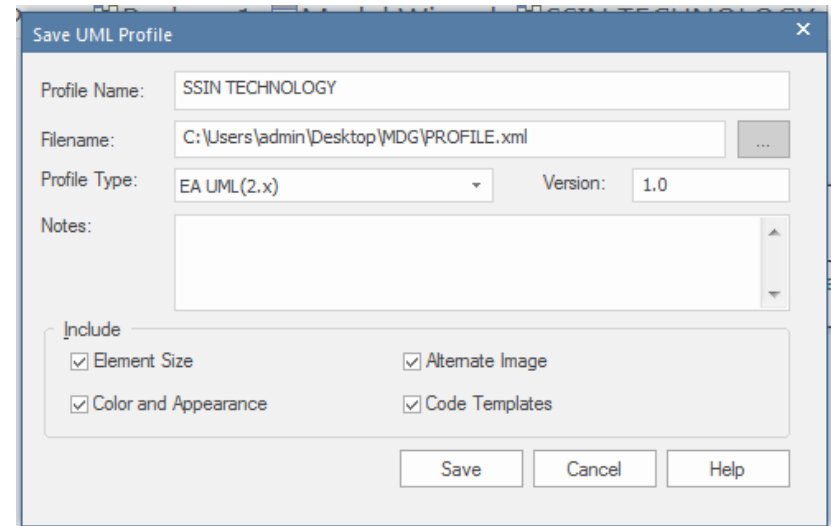
- Right-click on it and select the Save Package as UML Profile
- Select Diagram -> right Click -> Save as Profile

## Save UML Profile

- Choose File Name
- Retain default settings

## Note

Save the <<profile>>, <<diagram profile>> and <<toolbox profile>> separately.



# Stereotype Properties

Use the  
Stereotype  
Properties to

Add  
Metaclass

Set  
Metaclass  
properties

Set  
Stereotyp  
e  
Properties

The screenshot shows the 'Stereotype Properties' dialog box. On the left is a tree view with 'General' selected. The main area contains the following fields:

- Name:** A text box containing 'Class1'.
- Type:** A dropdown menu set to 'Element Extension', with an 'Add Metaclass' button to its right.
- Extensions:** An empty text box with a 'Remove' button to its right.
- Stereotype:** A table with two columns: 'Property' and 'Value'. It contains three expandable sections:
  - General Properties:** Includes 'Metatype', 'Strictness', and 'Default Attribute Type'.
  - Display Options:** Includes 'Size X' (0), 'Size Y' (0), and 'Icon'.
  - Instance Behavior:** Includes 'Mode' (Instance) and 'Type'.
- Metaclass:** An empty table with two columns: 'Property' and 'Value'.

At the bottom right are 'OK', 'Cancel', and 'Help' buttons.

# Stereotype properties

## Stereotype properties

**Stereotype Properties**

General  
Tagged Values  
Shape Script

Name:

Type:

Extensions:

Stereotype:

Property	Value
<b>General Properties</b>	
Metatype	
Strictness	
Default Attribute Type	
<b>Display Options</b>	
Size X	0
Size Y	0
Icon	
<b>Instance Behavior</b>	
Mode	Instance
Type	

## Metaclass properties

**Metaclass:**

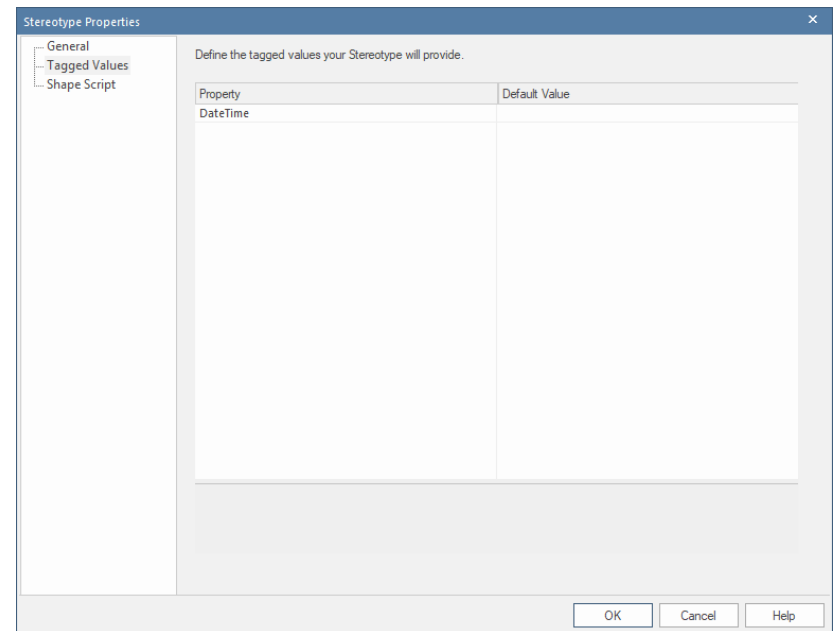
Property	Value
----------	-------

# Tagged Values

Click on the Tagged Values tab.

On this tab you can:

- ▣ Edit the default value of a tag
- ▣ Add a new tag of one of a range of types
- ▣ Create a Tag Group
- ▣ Assign or reassign a tag to a group
- ▣ Remove a tag group
- ▣ Delete a Tagged Value from the Stereotype



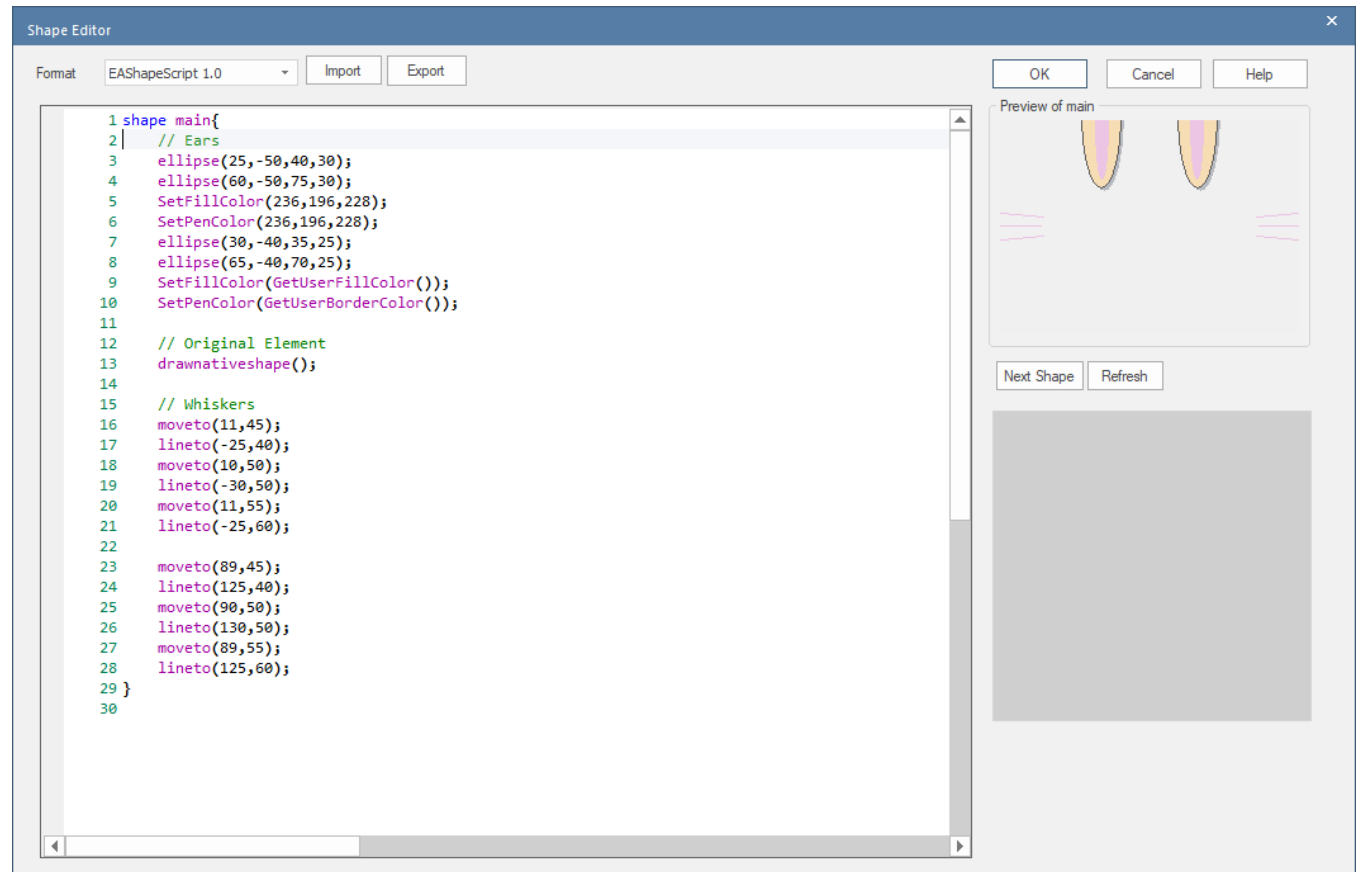
# Set shape scripts

Click on the  
Shape Script tab.

On this tab you  
can:

Add a Shape  
Script (if one  
does not  
exist)

Edit the  
existing  
Shape Script  
using the  
Shape Editor



# Applying alternate images using Shape Script

- One can also set alternate images to the new stereotypes.
- These can be defined using the profile helper, in the shape script editor.
- Use image function to set image from the Image Library.

## Note

Export images as part of the MDG technology when such values are used for stereotypes.

```
shape main
{
    layouttype="border";

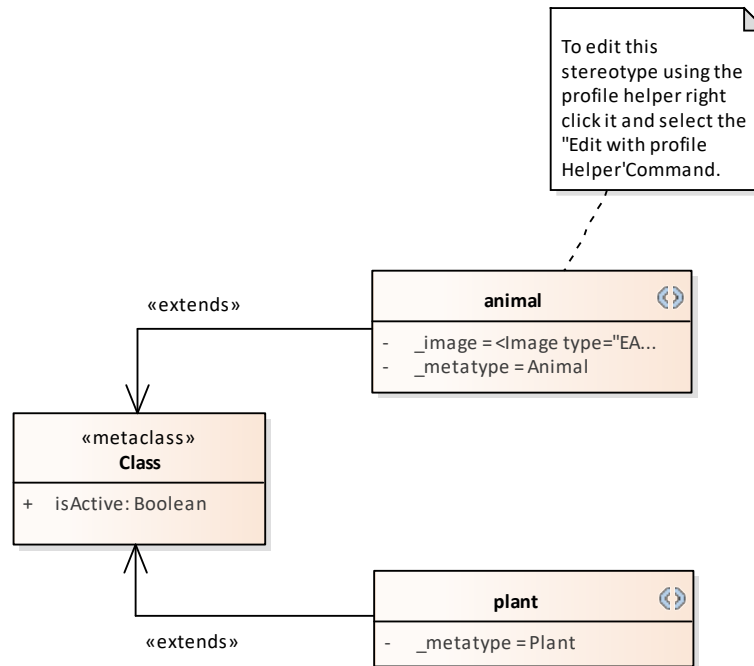
    image("image.bmp",0,0,100,100);
    addsubshape("name","S");

    shape name
    {
        h_align="center";
        print("#NAME#");
    }
}
```

# Add New Profile Element

## Create Profile elements

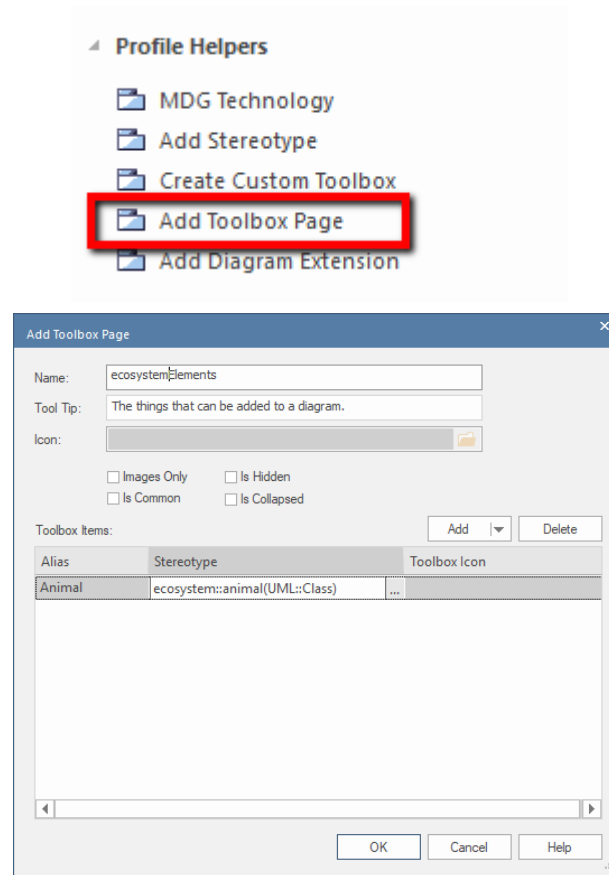
- After entering details in “Add Stereotype” window and finishing the task, diagram workspace will display the profile elements.





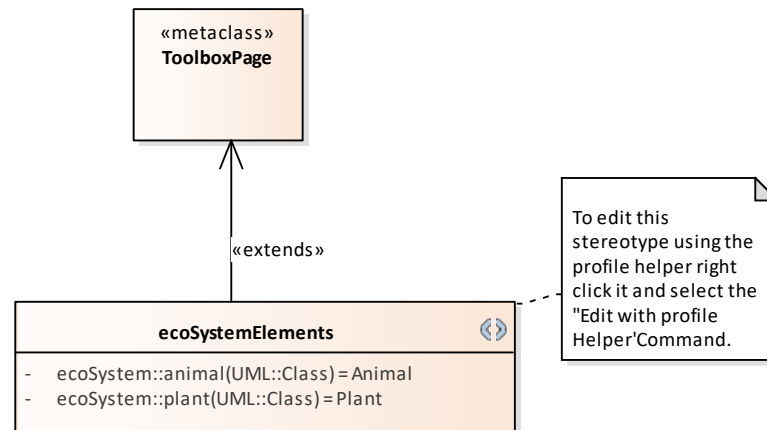
# Toolbox Page

- Add a “Metaclass”
- Create a toolbox page by dragging and dropping the “Add Toolbox Page” element from “Profile Helpers” toolbox.



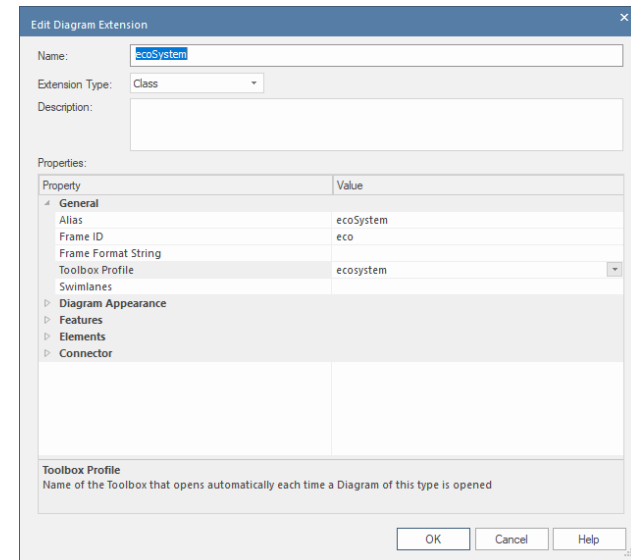
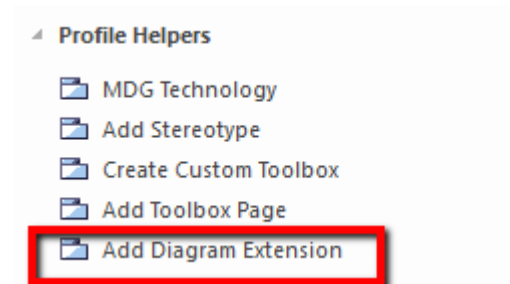
# Create a toolbox profile

- After entering details in the “Add Toolbox Page” window and clicking “OK” button, toolbox elements will be displayed in the diagram workspace.



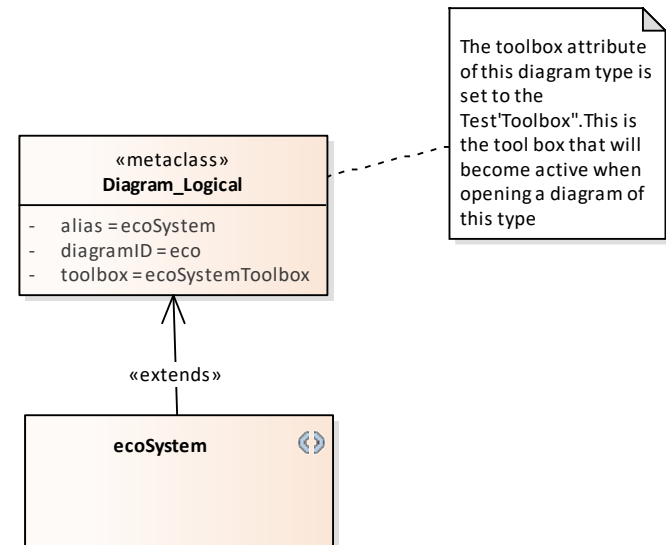
# Create a diagram profile

- For rapid development.
- Custom Diagram Types can be linked to a Toolbox Profile that will provide quick access to these modeling constructs.
- Create diagram profile by dragging and dropping “Add Diagram Extension” element from “Profile Helpers” toolbox.



# Create a diagram profile

- After entering details in the “Add Diagram Extension” window and clicking “OK” button, toolbox elements will be displayed in the diagram workspace.

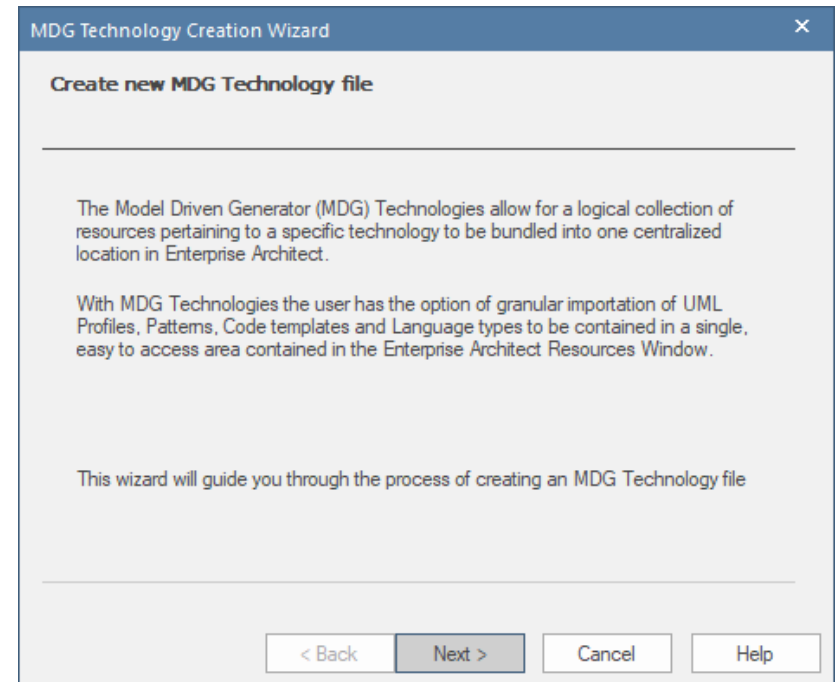




# Generating MDG Technology

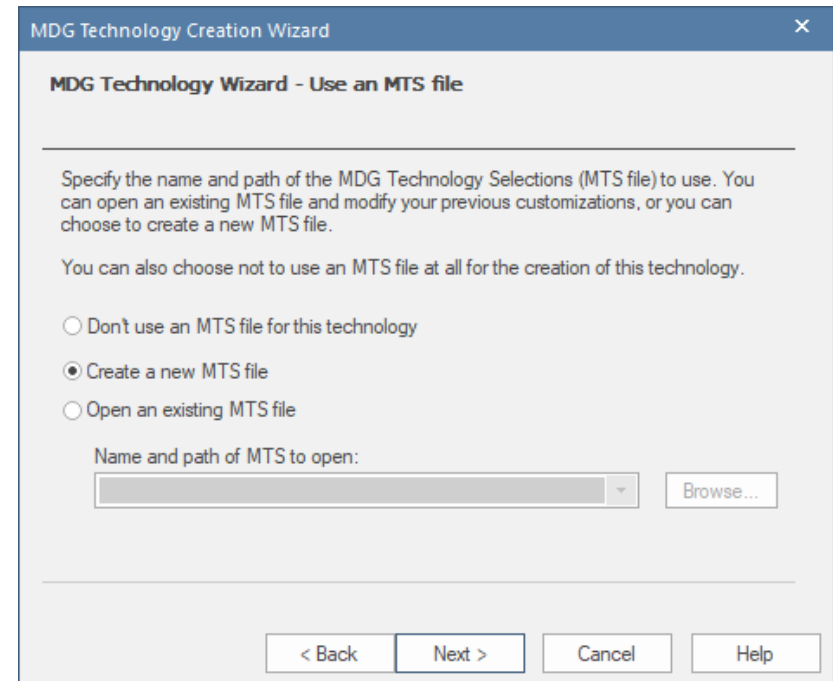
# Generate MDG technology

To generate MDG technology file, select “Specialize | Technologies | Publish-Tech | Generate MDG Technology” menu and fill the details in “MDG Technology Creation Wizard” and finish it which creates a MDG technology file.



# MTS files

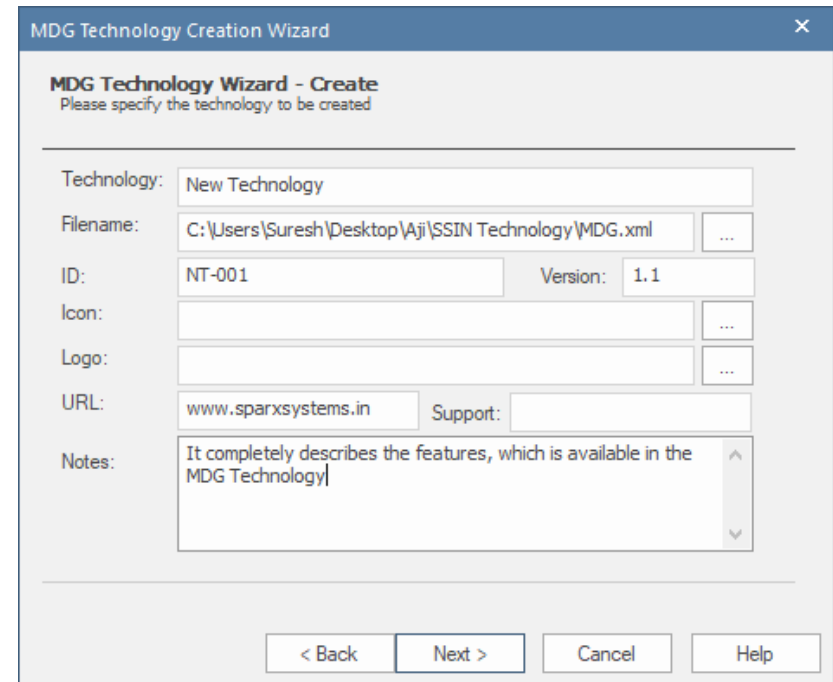
- MDG Technology Specification Files lets you save all the technology definition settings and reuse it when recreating it subsequently.
- The MDG Technology Wizard prompts you to:
  - ▣ Create an MDG Technology file based on a new MDG Technology Selection (MTS) file
  - ▣ Create an MDG Technology file based on an existing MTS file, or
  - ▣ Not use any MTS file



The screenshot shows a Windows-style dialog box titled "MDG Technology Creation Wizard" with a close button (X) in the top right corner. The main heading inside the dialog is "MDG Technology Wizard - Use an MTS file". Below this, there is instructional text: "Specify the name and path of the MDG Technology Selections (MTS file) to use. You can open an existing MTS file and modify your previous customizations, or you can choose to create a new MTS file." followed by "You can also choose not to use an MTS file at all for the creation of this technology." There are three radio button options: "Don't use an MTS file for this technology", "Create a new MTS file" (which is selected), and "Open an existing MTS file". Below the options is a text input field labeled "Name and path of MTS to open:" with a "Browse..." button to its right. At the bottom of the dialog, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

# MDG Technology Options

<b>Technology</b>	Name of the MDG Technology.
<b>Filename</b>	File path for technology file
<b>ID</b>	Unique reference
<b>Version</b>	Version number
<b>Icon</b>	(Optional) Icon for technology
<b>Logo</b>	(Optional) Logo for technology
<b>URL</b>	(Optional) Website URL
<b>Notes</b>	Short explanation of the functionality of the MDG Technology.



The screenshot shows the 'MDG Technology Creation Wizard' dialog box. The title bar reads 'MDG Technology Creation Wizard' with a close button. The main heading is 'MDG Technology Wizard - Create' with the instruction 'Please specify the technology to be created'. The form contains the following fields:

- Technology:** A text box containing 'New Technology'.
- Filename:** A text box containing 'C:\Users\Suresh\Desktop\Aji\SSIN Technology\MDG.xml' with a browse button ('...').
- ID:** A text box containing 'NT-001'.
- Version:** A text box containing '1.1'.
- Icon:** A text box with a browse button ('...').
- Logo:** A text box with a browse button ('...').
- URL:** A text box containing 'www.sparxsystems.in'.
- Support:** A text box.
- Notes:** A text area containing 'It completely describes the features, which is available in the MDG Technology'.

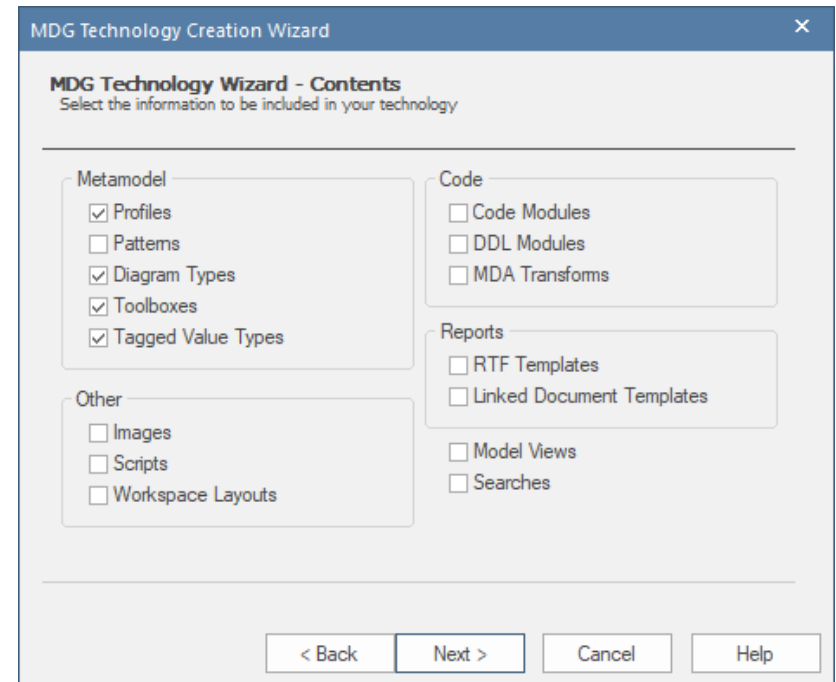
At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.



# Information to be included

The following can be included in the Profile

- ☐ Profile
- ☐ Pattern
- ☐ Diagram Profile
- ☐ Toolbox Profile
- ☐ Learning Center Pages
- ☐ Tagged Value Types
- ☐ Code Modules
- ☐ MDA Transforms
- ☐ RTF Report Templates
- ☐ Linked Document Templates
- ☐ Images
- ☐ Scripts (Corporate and 'Suite' editions)
- ☐ Workspace Layouts
- ☐ Model Views
- ☐ Model Searches



The screenshot shows the 'MDG Technology Creation Wizard - Contents' dialog box. The title bar is blue with the text 'MDG Technology Creation Wizard' and a close button. The main area has a light gray background with the title 'MDG Technology Wizard - Contents' and the instruction 'Select the information to be included in your technology'. There are four groups of checkboxes: 'Metamodel' (Profiles, Patterns, Diagram Types, Toolboxes, Tagged Value Types), 'Code' (Code Modules, DDL Modules, MDA Transforms), 'Reports' (RTF Templates, Linked Document Templates), and 'Other' (Images, Scripts, Workspace Layouts). The 'Metamodel' group has five checkboxes, all of which are checked. The 'Code' group has three checkboxes, all of which are unchecked. The 'Reports' group has two checkboxes, both of which are unchecked. The 'Other' group has three checkboxes, all of which are unchecked. At the bottom right, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

MDG Technology Creation Wizard

**MDG Technology Wizard - Contents**  
Select the information to be included in your technology

**Metamodel**

- ☒ Profiles
- ☐ Patterns
- ☒ Diagram Types
- ☒ Toolboxes
- ☒ Tagged Value Types

**Code**

- ☐ Code Modules
- ☐ DDL Modules
- ☐ MDA Transforms

**Reports**

- ☐ RTF Templates
- ☐ Linked Document Templates

**Other**

- ☐ Images
- ☐ Scripts
- ☐ Workspace Layouts

< Back   Next >   Cancel   Help

# Model Templates

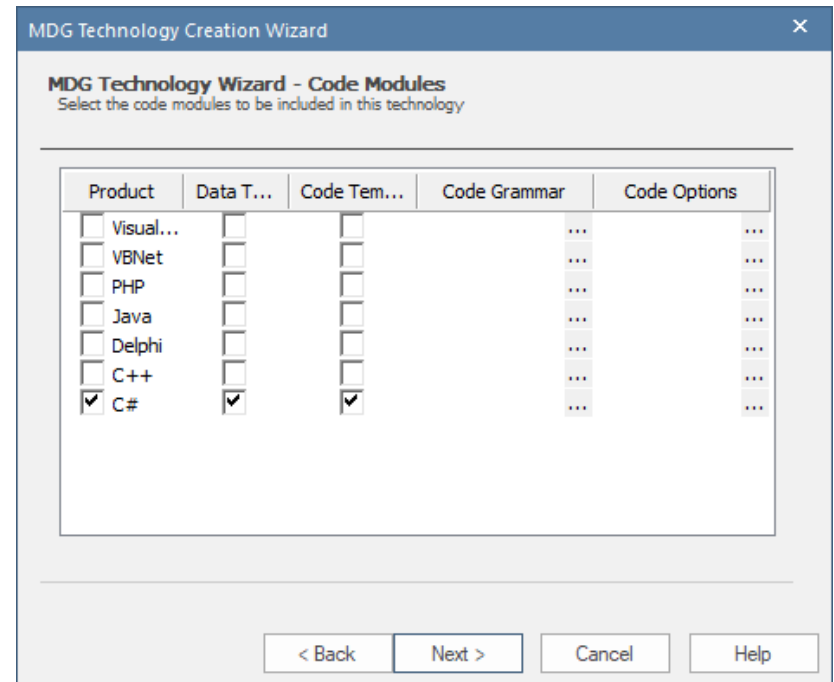
- Model Templates are helpers that lets users create a predefined project structure quickly.
- One can create a package that contains all sub-packages, diagrams, elements, notes and information in model template.

## Steps to Create a Model Template

1. Export the package containing the desired project structure to XML.
2. Insert the code below into the MTS file below MDG.Selections
3. Generate MDG Technology

# Adding Code Modules

- ❑ **Code modules** can be added for languages for which you have set up **code templates** and **data types**.
- ❑ Before you can set up a code template for a new language in the editor, you must define at least one data type for the language.
- ❑ The following can be Included
  - ❑ Data Types
  - ❑ Code Templates
  - ❑ Grammar
  - ❑ Code Options

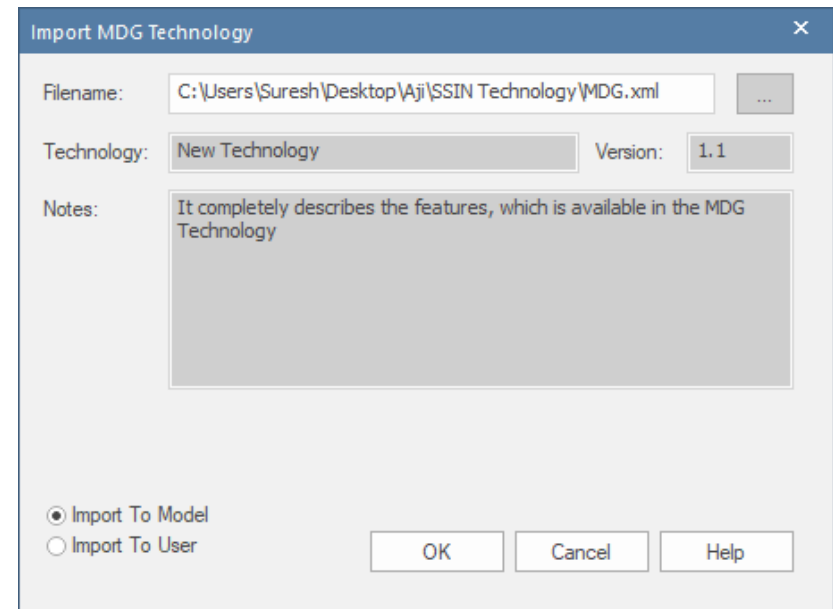




# Importing MDG Technology

# Import MDG technology

- Import MDG technology
- After creating MDG technology file, the same file has to be imported to use it as customized profile in Enterprise Architect.
- Importing is done by selecting “Specialize | Technologies | Publish-Tech | Import MDG Technology” menu and browse the technology file in “Select Technology File Name” window.



# Enable MDG Technology

After importing the technology file, the customized profile can be used to model the elements.

