2010

# WBS Modeler

A Microsoft Visio 2010 Add-In
Implementation

## Contents

# 1  Introduction

## 1.1  Purpose

The Visio Add-in WBS Modeler is intended to improve the project planning process by giving the opportunity to generate Project Plans from a Work Breakdown Structure (WBS) using a graphical representation of elements.

A WBS structure is a hierarchical representation of the elements and sub-elements in a project (see Figure 1).



Figure 1: Work Breakdown Structure (WBS) example

The WBS Modeler can either be used to visualize and edit an existing project plan or to create a new project plan in Microsoft Office Visio 2010 Professional and then export it to Microsoft Office Project (2003+) to carry out the next planning steps.

The Application enables effective integration of Visio with Microsoft Office Project. It provides an approach to visually and graphically create, edit and modify project plans using Visio.

The WBS Modeler offers the ability to manage project elements in a graphical view, as well as offering functionality to layout a WBS in Visio. The WBS can be exported back to Microsoft Office Project into a new project plan. It is also possible to update an existing plan.

To organize the structure within a WBS Modeler the outline code from Microsoft Office Project is utilised.

## 2 Installation

### 2.1 Pre-requisites

1. Microsoft Visio 2010 Professional or Premium

2. Microsoft Office Project 2003 SP1 or later

3. .NET Framework 4.0

   Download and install the .NET framework 4.0 from:

   http://msdn.microsoft.com/en-us/netframework/aa569263

   Installation procedure

Please ensure that Microsoft Visio is not running. To start the installation process, double-click the file **WBSModelerSetup.msi** and click **Next** as shown in the following screen.
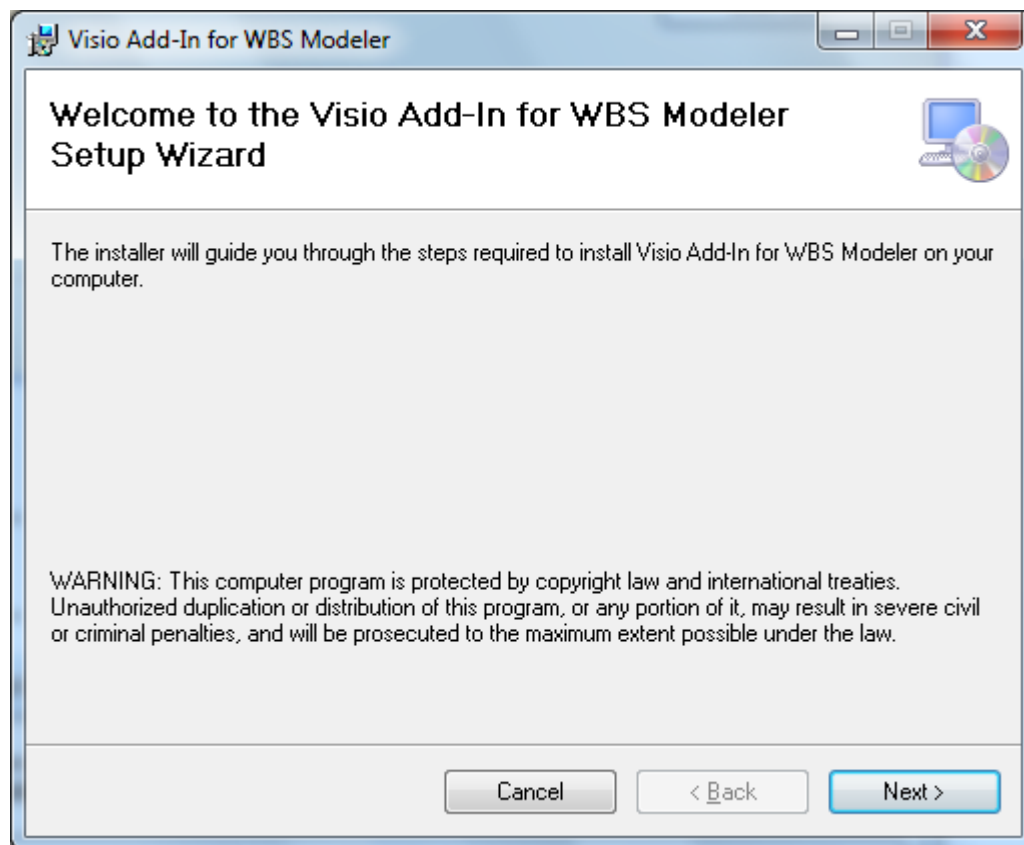


Figure 2: Welcome Screen

**Select Installation Folder** screen with the Setup Installation Path and Disk Space Information appears.
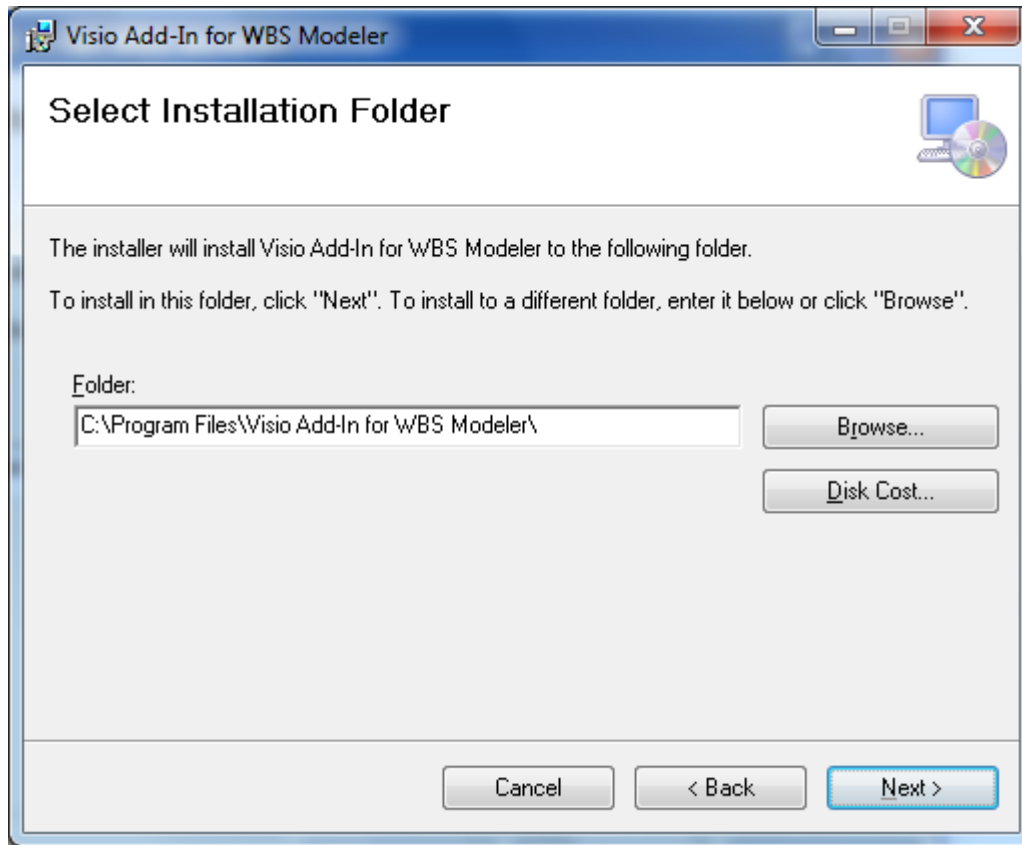


Figure 3: Set Up Installation Path and Disk Space Information

- Click **Next**, to install in the default folder path or click **Browse** to select the destination folder path.
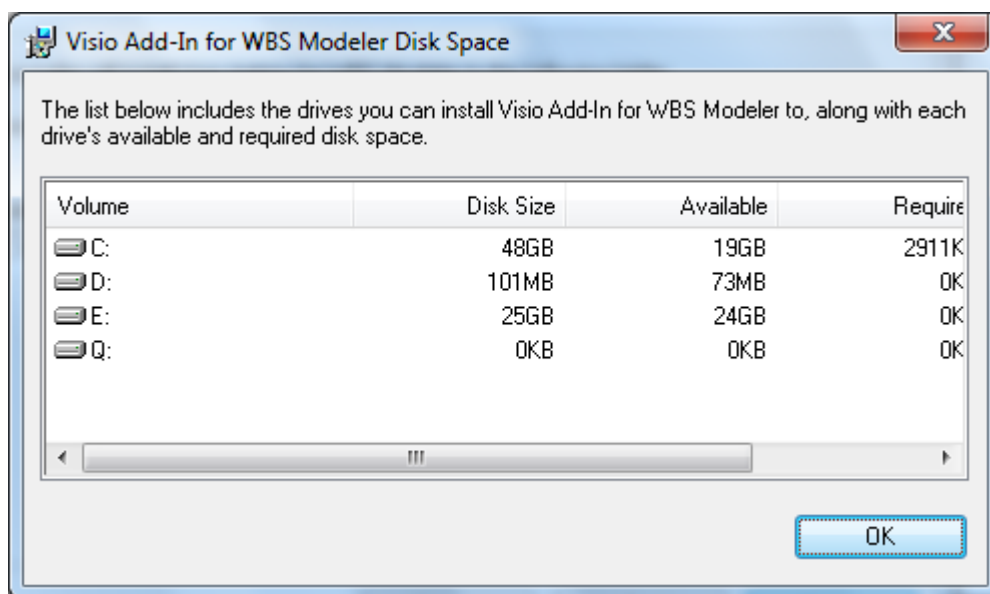
- To check the Disk Space Required, click **Disk Cost**.



Figure 4: Disk Space details for WBS Modeler Add-in

Click **Next** to continue. The Confirm Installation screen appears. Click **Next** to begin       installation or **Cancel** to exit the setup wizard.

**Note**: If you want to make any changes to the installation settings or go back to the previous screen, click **Back**.
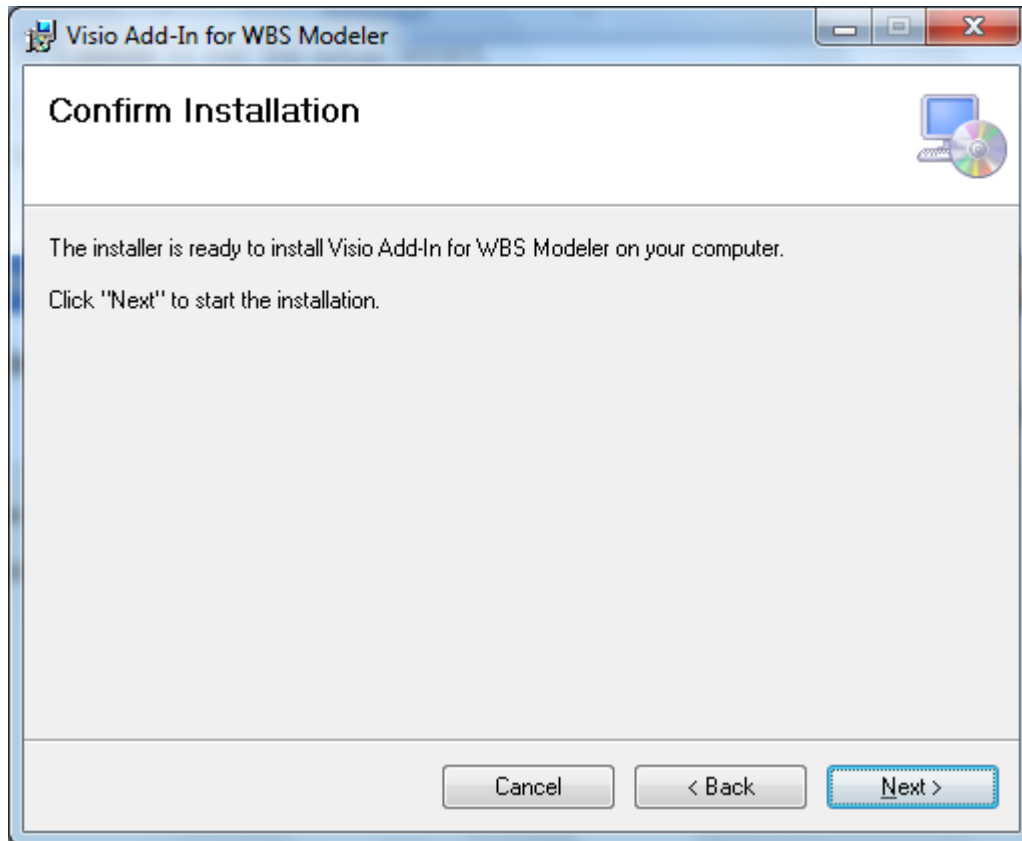


Figure 5: Confirm Installation

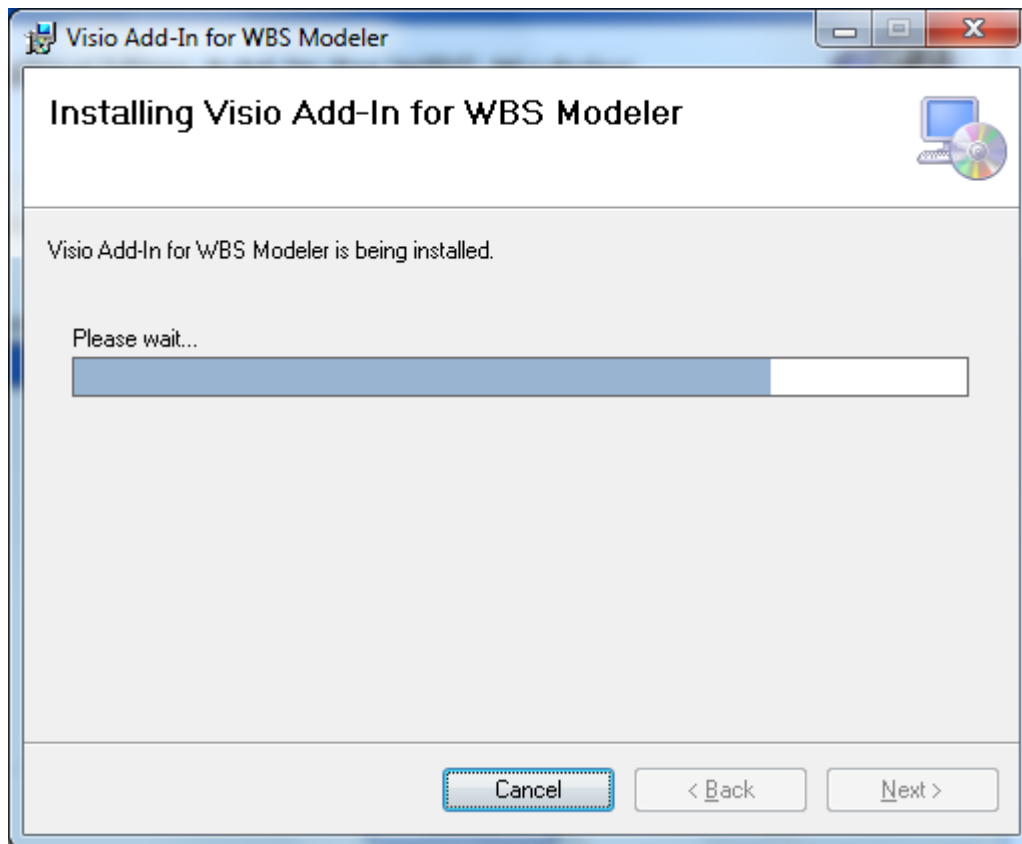The following window displays progress information of the setup process.



**Figure 6: Progress window**

> **Note**: Please wait while the setup wizard installs the WBS Modeler Add-in. This may take a few minutes.
>
> To cancel the installation click **Cancel.**

Once the installation is successful the **Installation Complete** screen appears.
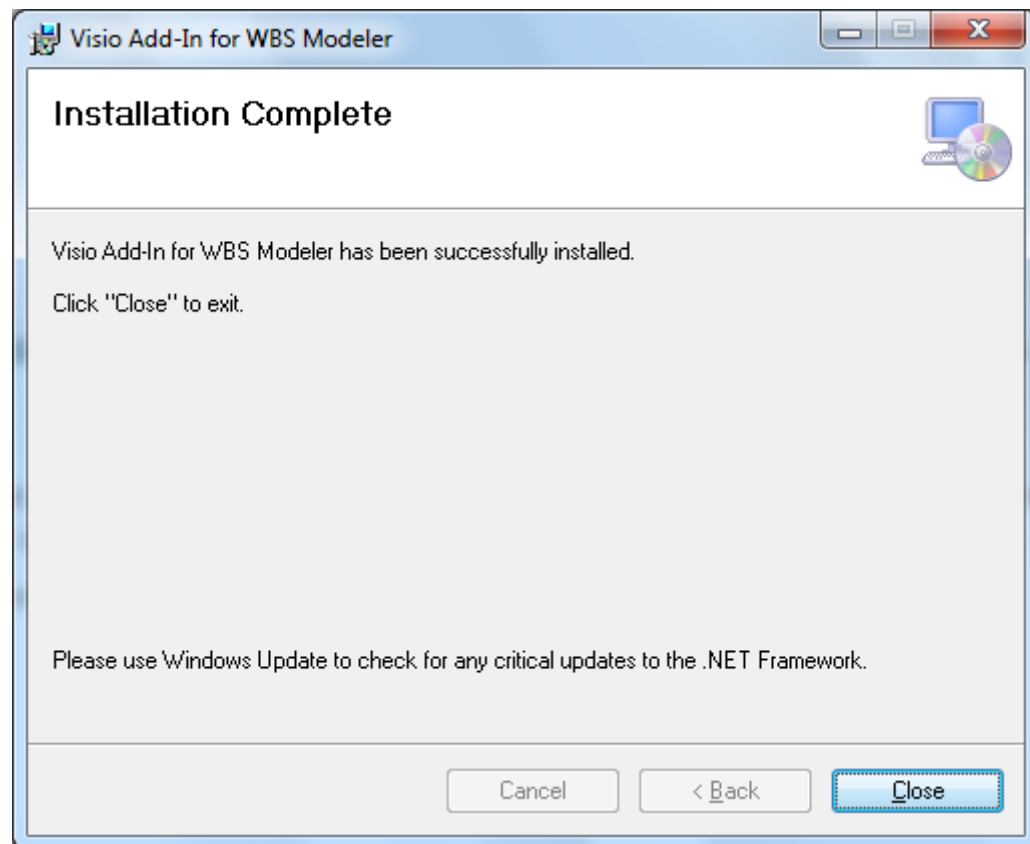


**Figure 7: Installation Complete**

# 3 Getting Started

This section describes the basic flow of the reference implementation.

The Microsoft Visio 2010 Add-in for **WBS Modeler** is a Visio Add-In that starts up automatically with Visio.

## 3.1 Selecting/Opening the WBS Modeler Template

A new template **WBS Modeler** is added in Add-Ins Folder under Templates Category after installation of the WBS Modeler Add-In.

1. Open Microsoft Visio.
2. Select **Add-Ins** from the **Template Categories** list.
3. Select **WBS Modeler** from the **Choose a Template** list.
4. Click the **Create** button or double click **WBS Modeler** from **Choose a Template** list.
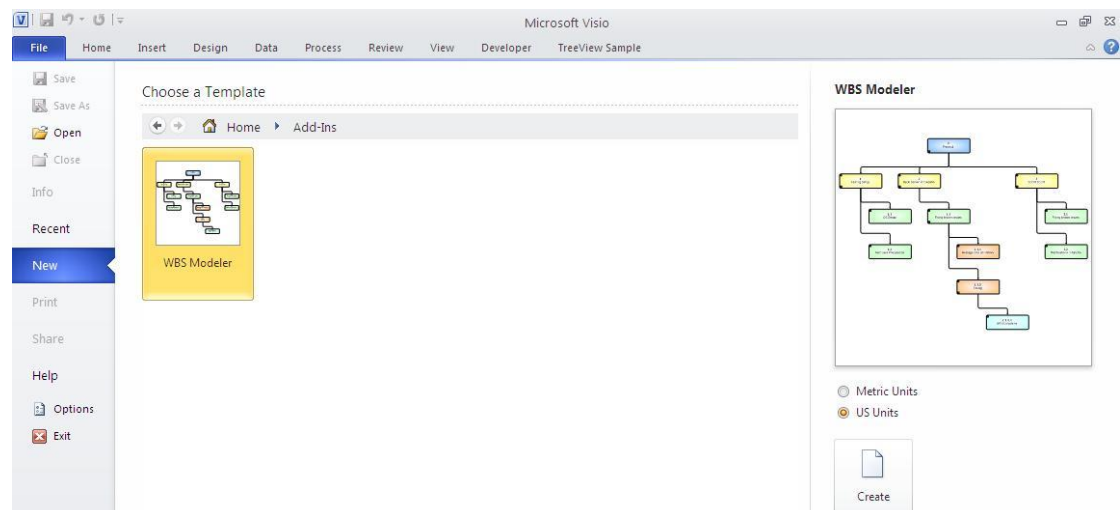


Figure 8: Selecting the template

5. A new ribbon **WBS Modeler** is added as the template opens a new document.
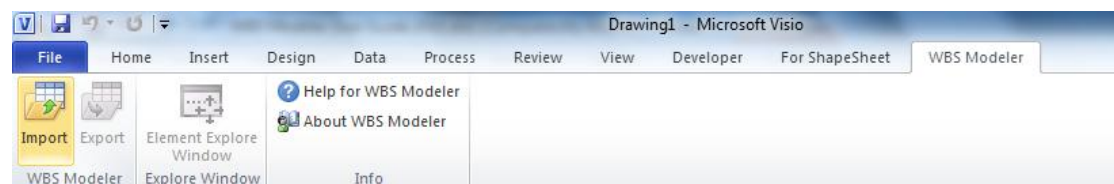


Figure 9: WBS Modeler Ribbon

# 4 Import from Microsoft Office Project

## 4.1 The Import Process

The import process is designed to extract data from a plan in Microsoft Office Project to be used in WBS Modeler.

Open Microsoft Visio and open the WBS **Modeler** drawing type template as described above. Select the ribbon button **Import** from the **WBS Modeler** ribbon in Visio as shown above.

This will open a new screen allowing you to both browse and open existing Microsoft Project file or select already opened Microsoft Project file, as shown below
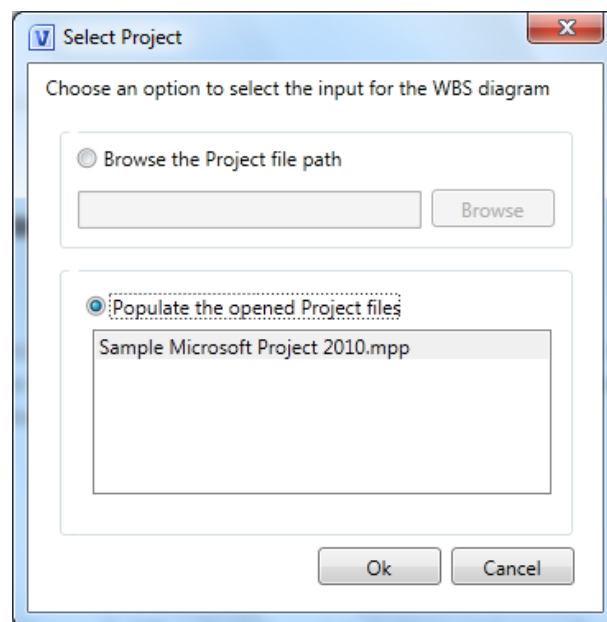


Figure 10: Select Project

If you click Ok, then it will start importing the data from Microsoft Project File.

The import process might take some time depending on system performance. A window will indicate the progress.
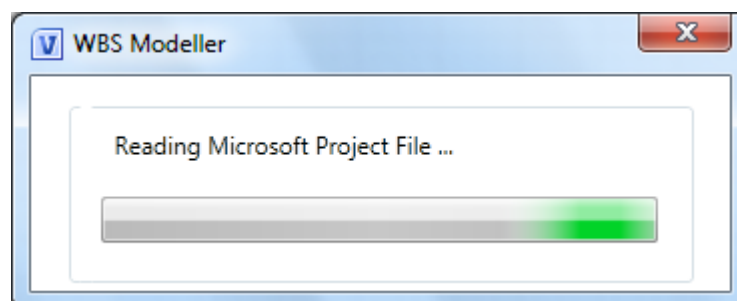


**Figure 11:** Import progress window

After completion of the process, the **Project Element Selector** window will automatically be displayed as shown below.
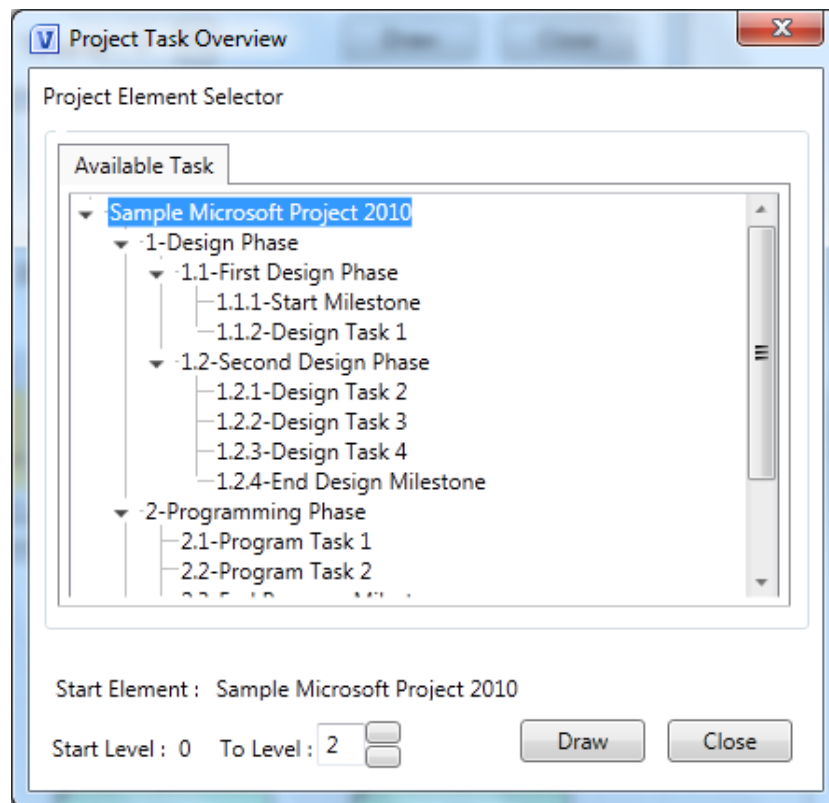
Figure 12: Project Element Selector

In this window you can choose the maximum level elements to be drawn in Visio. If you se-lect 'To level' as 2 and then click **Draw**, this elements from level 2 and all of its children will be hidden as a WBS as shown below.
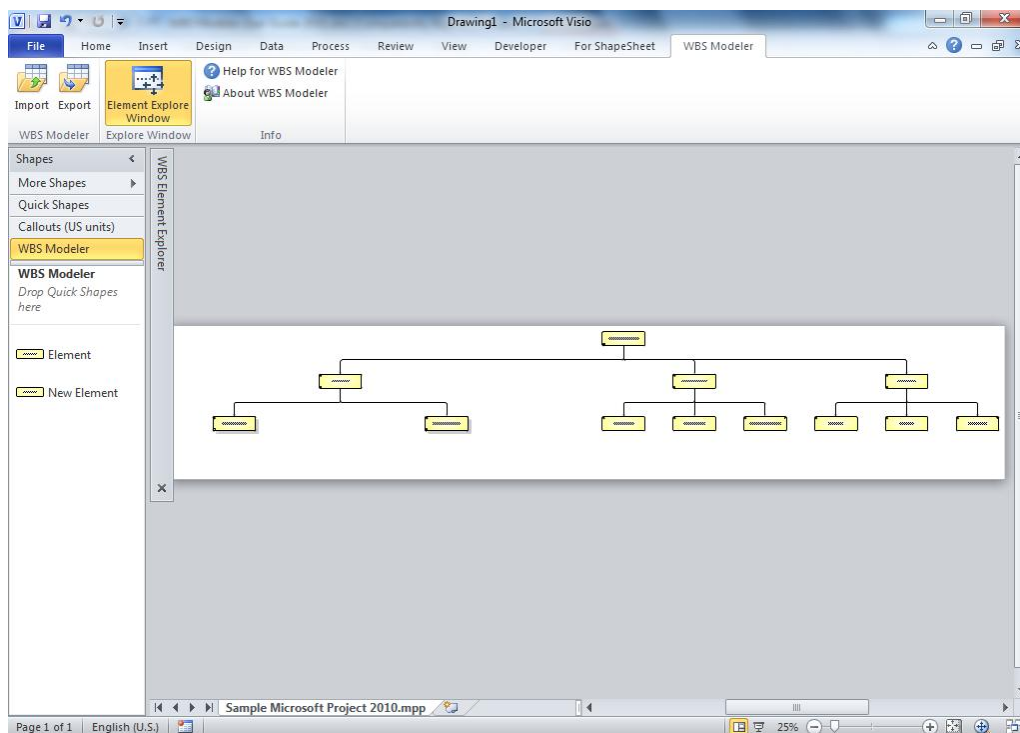


Figure 13: Work Breakdown Structure for a sub-element

The same applies if you choose to import the project summary element. The resulting WBS will in most cases be considerably bigger and due to limitations in the layout process not aligned as in the previous example. However, the layout can easily be improved using the functionality provided by WBS Modeler as described in the **Modeling Process** section later in this document.
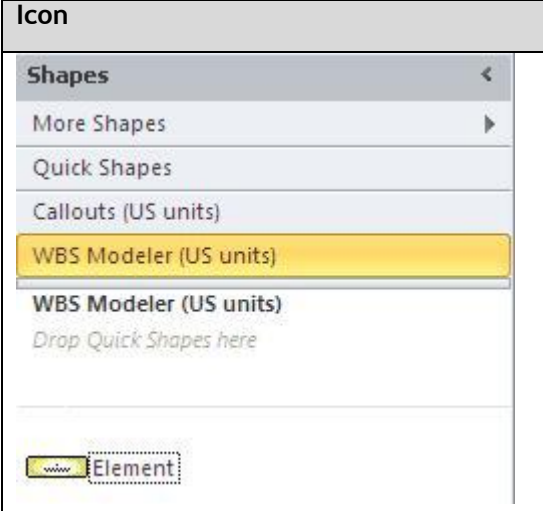
# 5 Modeling Process
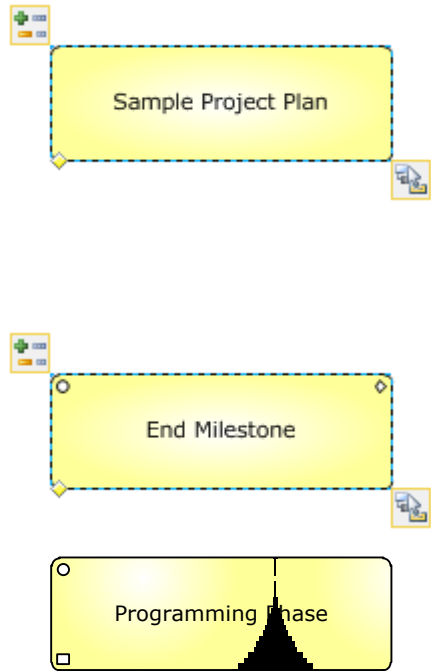
The Modeling process in WBS Modeler offers a wide variety of options to manipulate the WBS data and layout.

In the following section the basic elements of the WBS Modeler are presented and explained. Based on this introduction, the process to create and modify a WBS from scratch is explained.

The modification of an imported WBS will not be explained separately as it is basically the same as creating and modifying a newly created WBS. The only difference is that the Import process has to be completed beforehand.

## 5.1 Icons
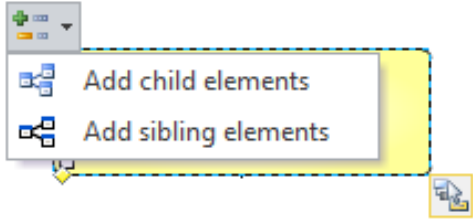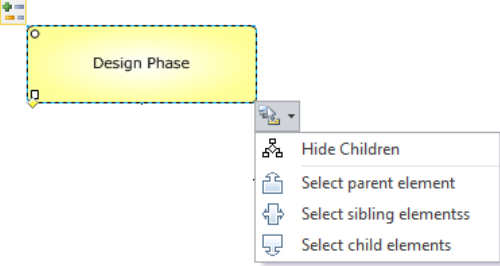
| Icon | Description |
|---|---|
|  | The WBS Modeler Shape repository contains one shape to represent elements and sub-elements. <br><br> To add a shape to the plan you can simply drag and drop the shape to the drawing pane. |

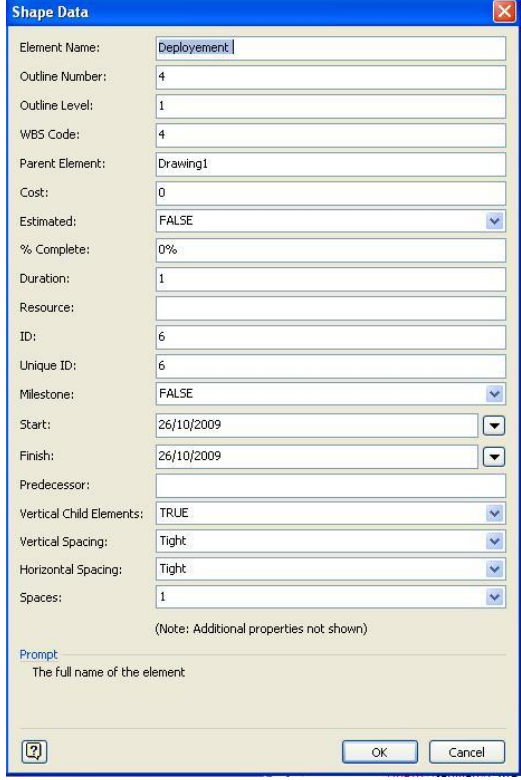| Icon | Description |
|---|---|
|  | If you drag and drop an element to the drawing pane you will see a yellow element symbol as shown on the left side. <br><br> The two boxes at diagonal corner are called **Smart Tags** and are visible if you select an element. These are explained in more detail in following section. <br><br> At the inner side of each of the four corner of an element shape, there are some icons visible if certain conditions apply. <br><br> • A diamond shape will be displayed in the right top corner if the element is a milestone. <br><br> • The triangle shape will be shown in the right bottom corner if the element is associated to an off-page reference. <br><br> • The circle shape in the left top corner will be shown if the element has been linked to an element in a project plan from Microsoft Office Project. <br><br> • A square shape will appear in the left bottom corner when an element has child elements. |

## 5.2 Functions / Ribbon

The following section provides a brief description of the ribbon items and functions of the WBS Modeler.

| Function/Ribbon | Description |
|---|---|
|  | The WBS Modeler ribbon contains six ribbon items: <br><br> • **Import** is used to import a project plan, i.e. the WBS structure of a project plan from Microsoft Office Project. <br><br> • **Export** offers the ability to export a WBS structure to Microsoft Office Project. This process is described later in this document. <br><br> • The **Element Explorer Window** can be used to show or hide the WBS Element Explorer window. By default this window is shown. |

| Function/Ribbon | Description |
|---|---|
| | • **Help for WBS Modeler** opens the help document of the WBS Modeler.<br><br>• **About WBS Modeler** is intended to provide information about the authors and the version of WBS Modeler. |
|  | The option **Add child elements** provides the function to add sub-elements to the currently selected element.<br><br>**Add sibling elements** option is designed to create a new sibling element. The newly created element will automatically be connected to the common parent element. |
|  | Using the selected element as the starting point several selections can be made.<br><br>The option **Hide Children** can be used to hide children of the currently selected element. This option might be useful to enhance readability.<br><br>This provides facility to select parent element, sibling elements or the sub-elements for the currently selected element. |

| Function/Ribbon | Description |
|---|---|
|  | If you right-click an element a menu will be shown that aggregates most of the above mentioned options and menu items.<br><br>**Cut, Copy, Paste, View, Format** and **Shape** are default items of Microsoft Visio. These are all explained in detail in the Visio help. |
|  | On the **Shape Data** page you can view and edit the properties for each element. |

| Function/Ribbon | Description |
|---|---|
| **Shape Data - ThePage** ☒<br><br>Prompt for Input — TRUE<br>Hide extra Project properties — FALSE<br>Hide Element layout properties — FALSE<br>Hide read only properties — FALSE<br>Keep focus on parent — TRUE<br>Auto resize page — FALSE<br>Allow element text edit — FALSE | If you choose **Data – Shape Data** by right clicking an element, the following properties can be viewed and modified.<br><br>If the setting **Prompt for Input** is set to **TRUE,** the user will be prompted to enter the element name and the outline number when adding a new element.<br><br>If **Hide extra Project properties** is set to **FALSE** (default value),the following additional fields will be displayed in the Shape Data window:<br><br>Cost<br><br>Estimated<br><br>% Complete<br><br>Duration<br><br>Resource<br><br>ID<br><br>Unique ID<br><br>Milestone<br><br>Start<br><br>Finish<br><br>Predecessor<br><br><span style="color:red">If **Hide Element layout properties** is set to **FALSE** (default setting), the following additional information will be displayed in the **Shape Data window** for elements:</span><br><br><span style="color:red">Vertical Sub Element</span><br><br><span style="color:red">Vertical Spacing</span><br><br><span style="color:red">Horizontal Spacing</span><br><br><span style="color:red">Hide Children</span><br><br><span style="color:red">Spaces</span><br><br>If **Hide read only properties** is set to **FALSE** (default is **TRUE**) the following additional properties will be displayed in the **Shape Data window** for elements:<br><br>Page Name |

| Function/Ribbon | Description |
|---|---|
| | Page Number |
| | File Name |
| | Label Name |
| | Label WBS |
| | The **Keep focus on parent** is set to **TRUE** by default. If this option is set to **FALSE** the selection will be moved to the child elements instead of the parent element when connecting elements. |

## 5.3 Custom Properties

| Property | Description |
|---|---|
| Element Name | Name of the element |
| Outline Number | Position of the element in the WBS/Outline;<br><br>The **Outline Number** represents the level of the element within the work breakdown structure of the plan. If only a part of the whole plan is imported from Microsoft Office Project this will refer to the original structure of the plan.<br><br>This information will be used to update the relevant parts of the project plan when the plan is exported back to Microsoft Office Project. |
| WBS Code | The **WBS Code** is used to store information about the original WBS value of a plan as imported from Microsoft Office Project. |
| Element Project | This field is designed to store information about the project an element belongs to. |
| Hide Children | If set to **TRUE** all children of the currently selected element will be hidden. If set to **FALSE** hidden elements will be visible again. |
| Page Name | Read-Only field for the name of the page in which the element is currently displayed. |
| Page Number | Read-Only field for the number of the page in which the element is currently displayed. |
| File Name | Read-only field to display the Visio file name. |
| Label Name | Read-only field for the element name (the display area length is limited to 24 characters). |
| Label WBS | Read-only field to display the element label for the WBS Code. |

## 5.4 Process

This chapter covers the functionality of the WBS Modeler and how the functions and ribbon items briefly described in the previous two sections can be used.

### 5.4.1 Creating elements

#### 5.4.1.1 Drag and drop

To create a new element simply drag and drop an element shape from the **Shapes stencil** to the **drawing area** as shown below.
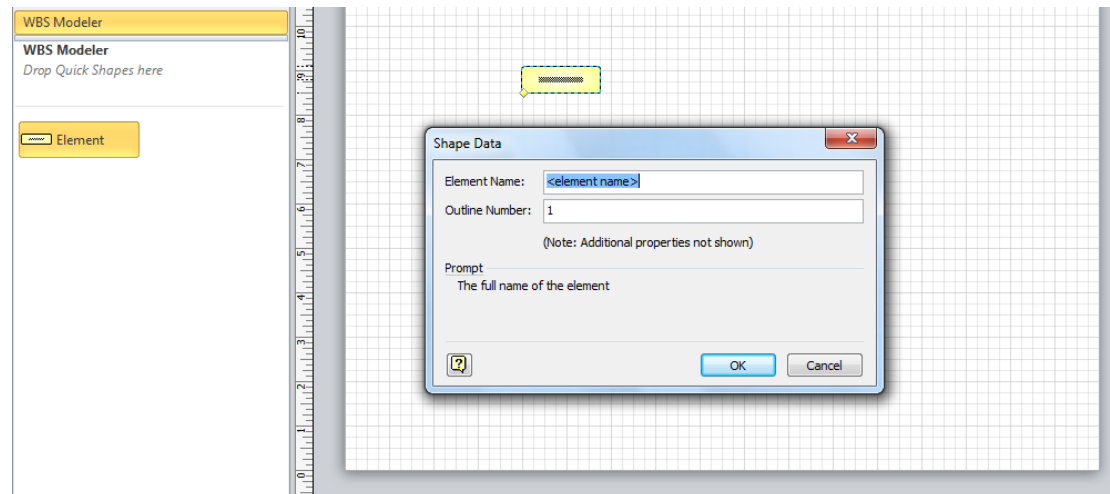


Figure 14: Create new element

The prompt for the **Element Name** and **Outline Number** will open automatically after the element has been dropped to drawing area. The shapes should be connected by connectors. The **Outline Number** will be calculated while exporting the diagram depending on the connections made.

#### 5.4.1.2 Add child element / add sibling element

Right click the element to which you want to add child/sibling element/s. Choose the option, **Add child elements** or **Add sibling elements** from the context menu as shown below.
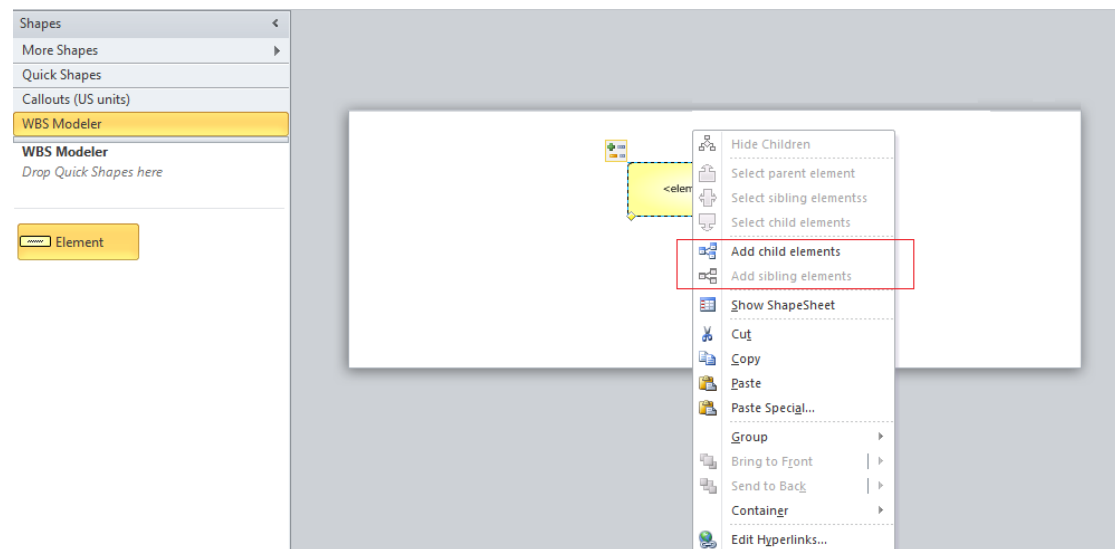
Figure 15: Creating new sibling/child element(s) #1

If you choose **Add child elements** or **Add sibling elements,** you will be prompted for the element names to be added as shown below. Each line in this window resembles one    element to be added. For first element you cannot add sibling.
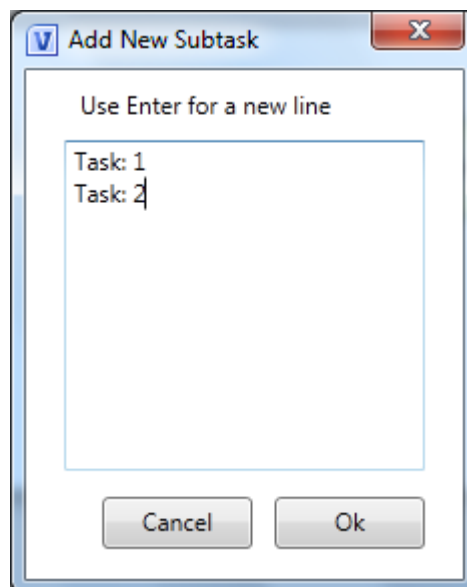


Figure 16: Creating new sibling/child element(s) #2 – add child element(s)

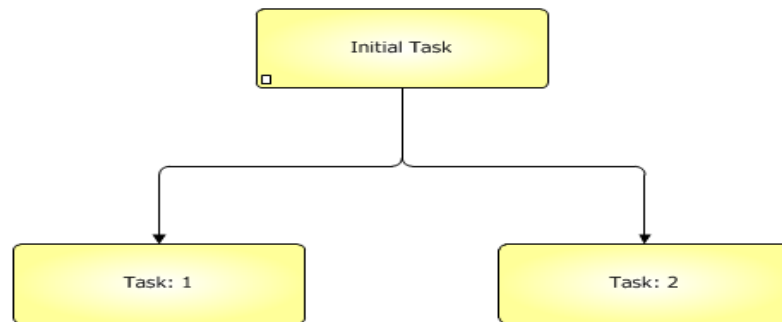If two child elements have been added, the result will be as shown below.

Figure 17: Creating new child element(s)

If two sibling elements have been added, the result will be as shown below.
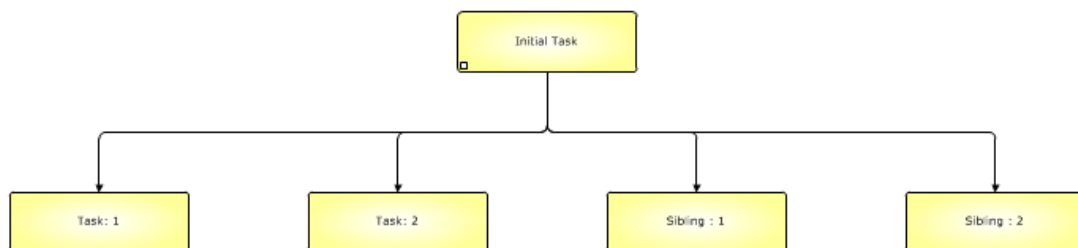


Figure 18: Creating new sibling element(s)

### 5.4.2 Hiding elements

To hide a set of elements select **Hide Children** option from Smart tag from right bottom corner.
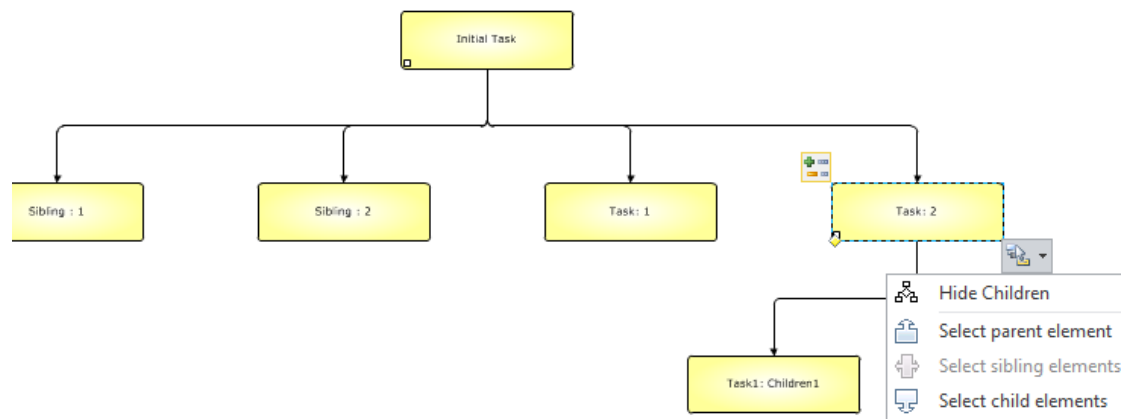


Figure 19: Hide Children

If child elements are hidden, then that is visualized with a shadow line as shown in the  following example (See Figure 30).
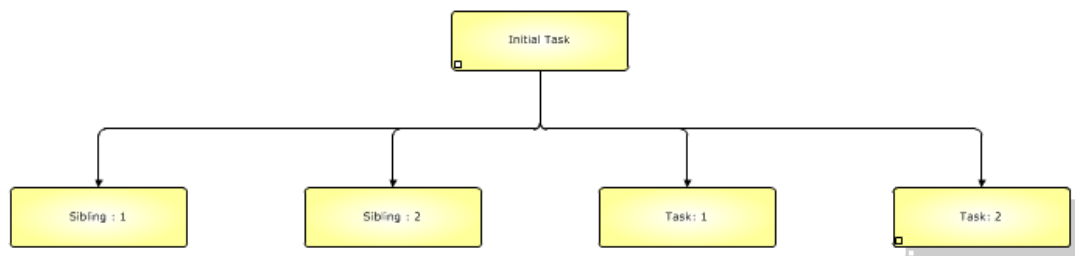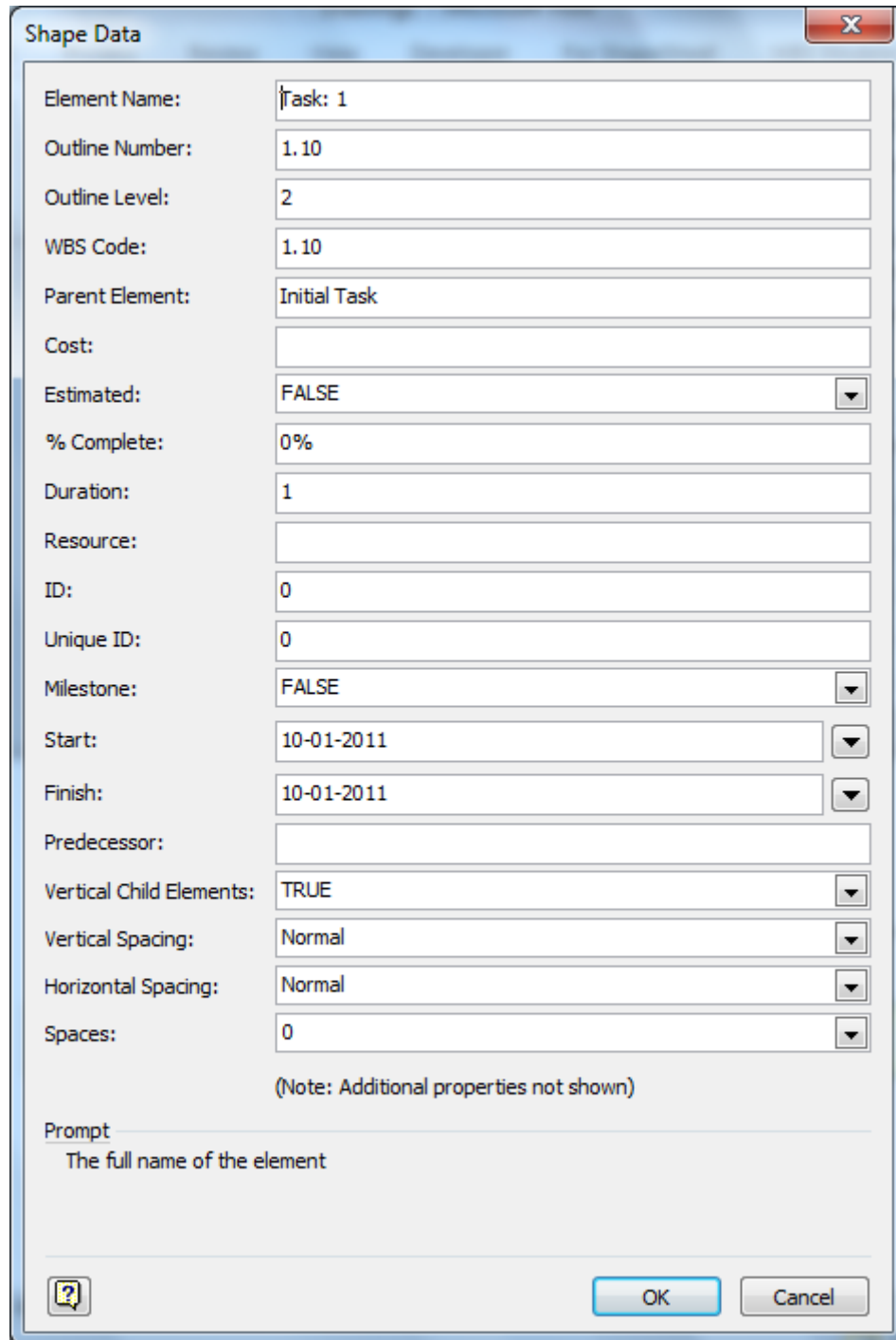


Figure 20: Visualization of an element containing hidden sub-elements

### 5.4.3    Renaming elements

Renaming elements in WBS Modeler is straightforward. Double-click an element to open the **Shape Data** dialogue (see Figure 31).

Figure 21: Shape Data

On this dialogue box, you can view and modify the element information. This information may change depending on the selections made for the page properties.

### 5.4.4    Moving elements

You can directly move element, the connectors will move as per the shapes.

### 5.4.5    Deleting elements

Select the element that you want to delete and press the **Delete** button on your keyboard. It will delete all the shape with all of its child shapes.

# 6   Reporting

The WBS Modeler also contains a template to generate Reports for a WBS structure. To generate a report in Visio, choose **Shape Reports** from **Review ribbon** tab (see Figure 37).
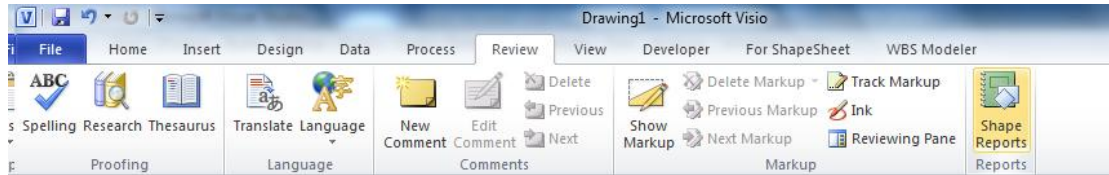


Figure 22: Reporting #1

On the following dialogue, one of the default templates delivered with WBS Modeler can be selected or a new one can be created. The process of creating a new  template is not specific to WBS Modeler and is thus not covered in this document.
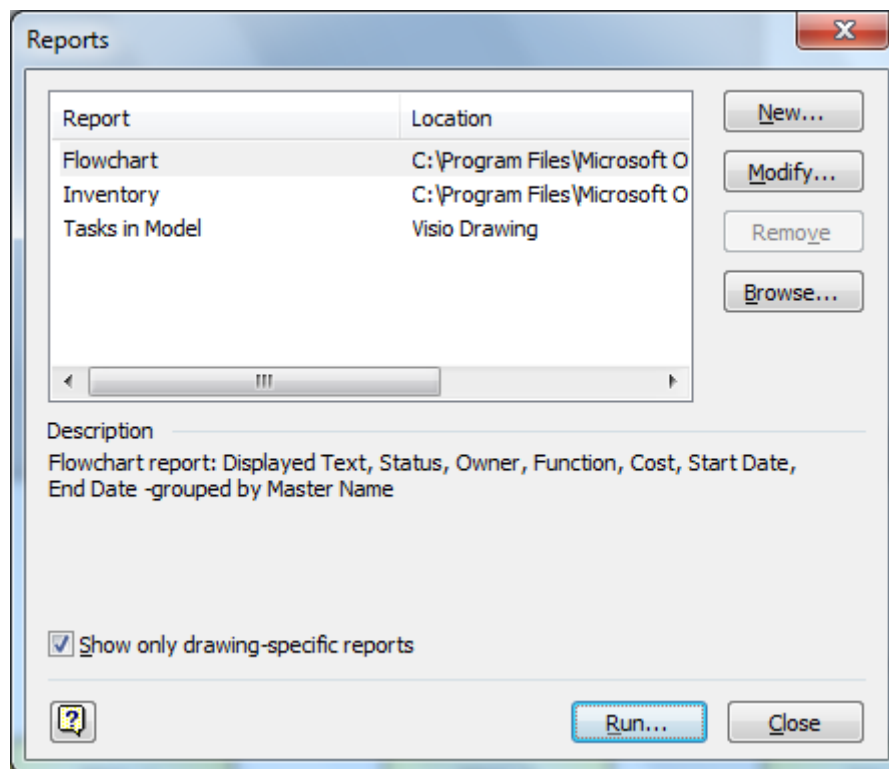


Figure 23: Choose Report

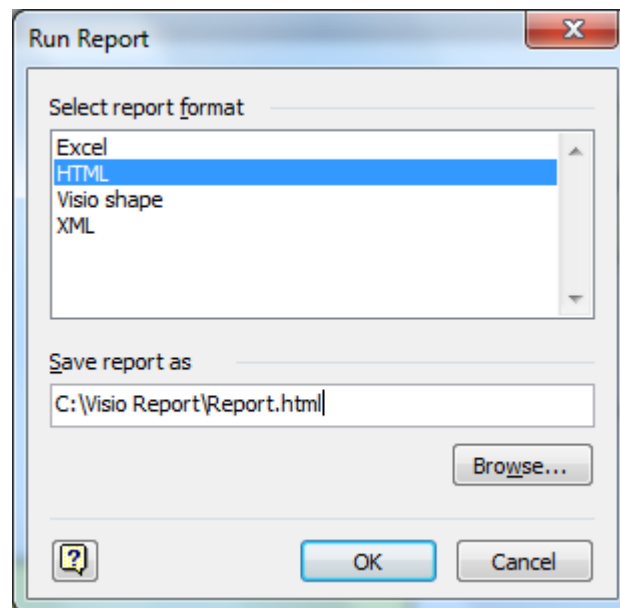Select the report and press **Run** to generate the report.

Figure 24: Run Report window

Select the format for the report and click **OK**.



Figure 25: Sample Flowchart Report

# 7 Export to Microsoft Office Project

1. To export a plan to Microsoft Office Project, select the **Export** option from the **WBS Modeler** ribbon.
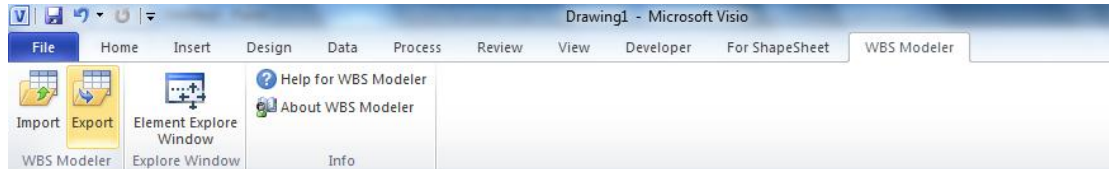


Figure 26: Export

2. User is prompted for file name and location of the new project file that will be created. The default location is My Documents and the default file name is the same name as the Visio drawing file name but with the Project file type (See Figure 47).
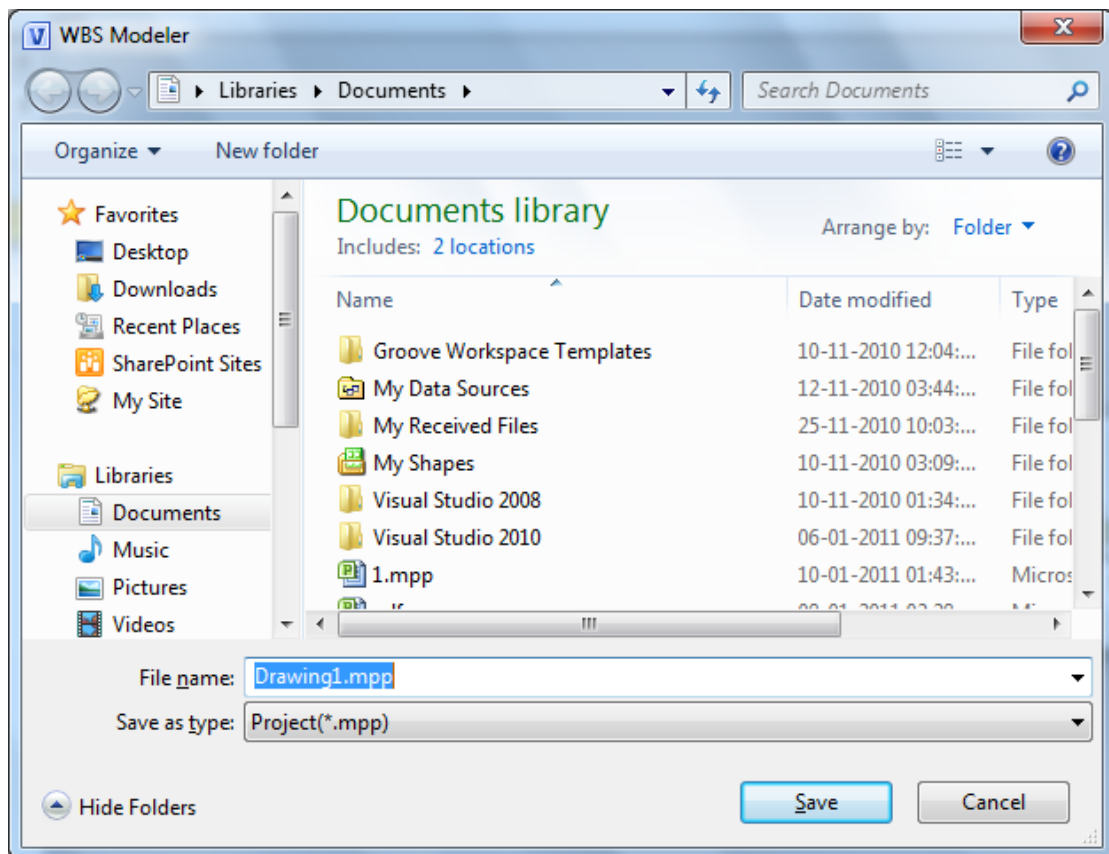


Figure 27: Export to Project

3. User can choose different location and file name and click the **Save** button.

4. The new project file is generated based on the shapes in the Visio WBS diagram.
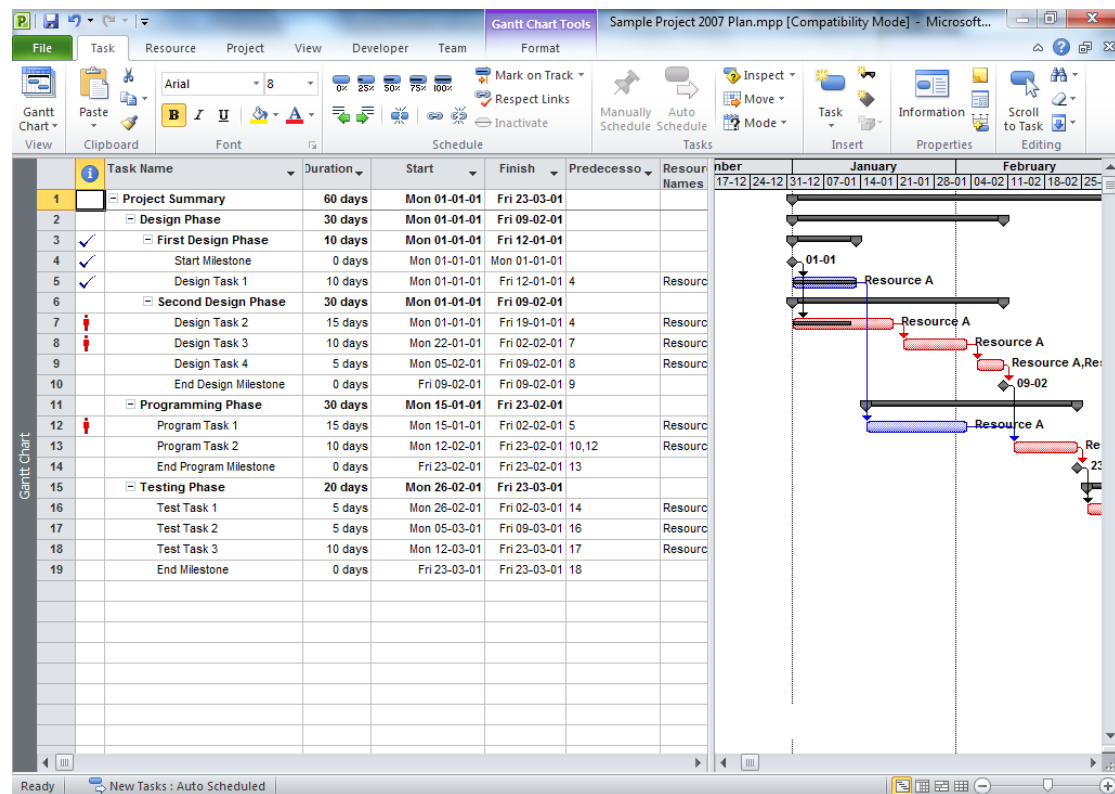
Figure 28: Result of the export process

# 8   Removal of WBS Modeler

Please ensure that Microsoft Visio is not running. To start the uninstall process; go to **Control Panel** click **Uninstall a program** (specific to Windows 7)



Figure 29: Add/Remove Programs

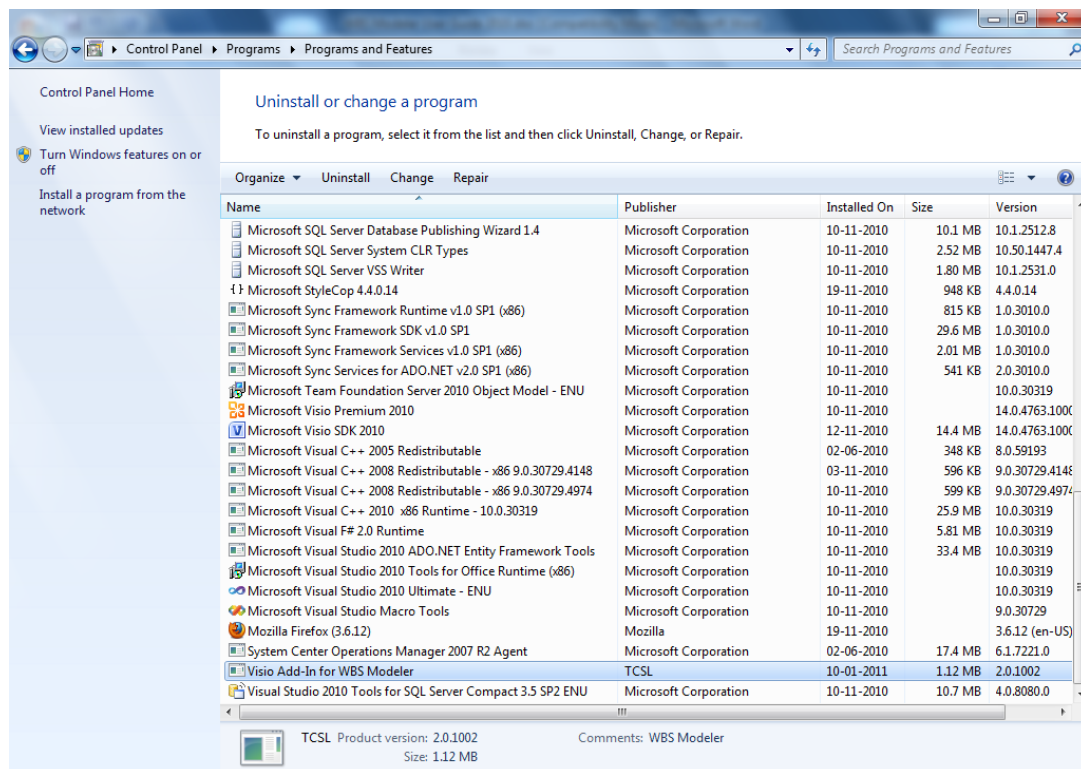In the **currently installed programs** screen, select the entry **WBS Modeler** and click **Uninstall**.



Figure 30: Remove WBS Modeler