



Project Management with Enterprise Architect

Enterprise Architect is an intuitive, flexible and powerful UML analysis and design tool for building robust and maintainable software.

This booklet explains the Project Management facilities of Enterprise Architect.



Project Management with Enterprise Architect

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Foreword

This user guide provides an introduction to the Project Management facilities of Enterprise Architect.

Project Management



Enterprise Architect provides strong support for managing your project. Project Managers can use Enterprise Architect to estimate project size, measure risk and effort, and assign resources to elements. Enterprise Architect also provides support for testing, change control and maintenance.

Metrics and Estimation

Project [estimation](#)^[3] is working out how much time and effort is required to build and deploy a solution. Enterprise Architect provides the *Use Case metrics* facility as a means of measuring the complexity of a system and getting an indication of the effort required to implement the model, and the project timescale. You base these estimates on carefully-calibrated metrics.

Resource Management

[Resources](#)^[9] are the people who work on a project. You can assign roles to them and allocate tasks on specific model elements, which enables tracking of effort and estimation of time to complete.

Project Maintenance

During a project you monitor and manage the development and progress of individual model elements. You can record [problems, changes, issues and tasks](#)^[35] that affect these individual elements as they arise, and document the solution and associated details.

Similarly, Enterprise Architect helps you to manage [changes and issues](#)^[40] that apply to the whole system.

Project Tasks and Issues

In the course of a project, there are various non-technical [tasks](#)^[45] that are vital to the successful management and completion of the project, such as meetings. Enterprise Architect helps you to record and monitor these, and to manage non-technical [project issues](#)^[48] as they arise.

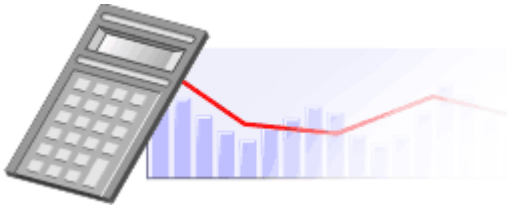
Testing

Enterprise Architect enables you to [create and manage test scripts](#)^[19] for model elements, covering unit, integration, scenario, system and acceptance tests. You can import tests from other elements, generate them from scenarios, and generate test documentation and reports. You can also indicate the presence of tests on an element by displaying test information on the element in a diagram.

See Also

- [Project Glossary](#)^[53]
- [Update Package Status](#)^[60]
- [Manage Bookmarks](#)^[61]

1 Estimation



Metrics and Estimation

Project estimation is the task of working out how much time and effort is required to build and deploy a solution.

The Use Case metrics facility in Enterprise Architect provides a starting point for estimating project effort. Using this facility you can get a rough measure of the complexity of a system and some indication of the effort required to implement the model. Like all estimation techniques, this one requires some experience with previous projects to 'calibrate' the process.

There is additional information available on Use Case metrics at www.sparxsystems.com/UCMetrics.htm.

Calibrating

The following values must be carefully calibrated in order to gain the best possible estimates:

- [Technical Complexity Factors](#) ^[3], which are values that attempt to quantify the difficulty and complexity of the work in hand
- [Environment Complexity Factors](#) ^[5], which are values that attempt to quantify non-technical complexities such as team experience and knowledge
- [Default Hour Rate](#) ^[8], which sets the number of hours per Use Case point.

Estimating

Once you have entered all the calibration values, you can estimate the project timescale through the [Use Case Metrics dialog](#) ^[6].

1.1 Technical Complexity Factors

Technical Complexity Factors are used in the *Use Case Metrics* estimation technique. You can add or modify these factors using the **Estimation Factors** dialog.

To open this dialog, select the **Settings | Estimation Factors** menu option. Click on the **Technical Complexity Factors** tab.

Technical Complexity Factors | Environment Complexity Factors | Default Hour Rate

Factor Number: Description: Weight: Assigned Value:

TCF04	Complex internal processing	1.00	4.00
-------	-----------------------------	------	------

New Delete Save

Defined Technical Types

Type	Description	Weight	Value
TCF01	Distributed System	2.00	5.00
TCF02	Response or throughput performan...	1.00	4.00
TCF03	End user efficiency (online)	1.00	2.00
TCF04	Complex internal processing	1.00	4.00
TCF05	Code must be re-usable	1.00	2.00
TCF06	Easy to install	0.50	5.00
TCF07	Easy to use	0.50	3.00
TCF08	Portable	2.00	3.00
TCF09	Easy to change	1.00	3.00
TCF10	Concurrent	1.00	2.00

Unadjusted TCF: 47.00

Close Help

Defined Technical Types

This editable list should contain all factors that could affect the technical complexity of the project environment.

These configured factors, whose summed **Ex Values** yield the **Unadjusted TCF** value, work together with the [Environment Complexity Factors](#) ⁵ to skew the overall complexity up or down, depending on the level of technical complexity and the corresponding level of environmental support.

Note:

You can transport the Technical Complexity Factors between models, using the **Export Reference Data** and **Import Reference Data** options on the **Tools** menu. See the *Reference Data* topic in *UML Model Management*.

Weight

The TCF **Weight** indicates how much technical complexity you assign to a factor. For example, *'the system is to be developed in ADA'* might warrant a higher weight than *'the system is to be a shell script'*. A weight evaluates its respective factor, but is irrelevant to a project; the **Value** field assesses each factor's role within a project. The supplied factors and their associated weights are defined by the *Use Case Points Method*, although they can be adjusted to suit a project's specific requirements.

Value

For most purposes, the only table column requiring adjustment is **Value**, which indicates the degree of

influence a particular factor has on the project. As a suggested gauge, a value of **0** indicates no influence, **3** indicates average influence and **5** indicates strong influence.

1.2 Environment Complexity Factors

Environment Complexity Factors are used in the *Use Case Metrics* estimation technique. You can add or modify these using the **Estimation Factors** dialog.

To open this dialog, select the **Settings | Estimation Factors** menu option. Click on the **Environment Complexity Factors** tab.

Technical Complexity Factors | Environment Complexity Factors | Default Hour Rate

Factor Number: Description: Weight: Value:

Defined Environment Types

Type	Description	Weight	Value
ECF01	Familiar with Rational Unified Process	1.50	4.00
ECF02	Application experience	0.50	3.00
ECF03	Object-oriented experience	1.00	4.00
ECF04	Lead analyst capability	0.50	4.00
ECF05	Motivation	1.00	3.00
ECF06	Stable requirements	2.00	4.00
ECF07	Part-time workers	-1.00	0.00
ECF08	Difficult programming language	-1.00	3.00

Unadjusted ECF:

Defined Environment Types

This editable list should contain all factors affecting the general design and development environment, including team experience and knowledge, team size, expertise and other non-functional environmental factors.

These configured factors, whose summed **Ex Values** yield the **Unadjusted ECF** value, work together with the [Technical Complexity Factors](#)³⁾ (TCFs) to skew the overall complexity up or down, depending on the level of technical complexity and the corresponding level of environmental support.

Note:

You can transport the Environment Complexity Factors between models, using the **Export Reference Data** and **Import Reference Data** options on the **Tools** menu. See the *Reference Data* topic in *UML Model Management*.

Weight

A **Weight** evaluates its respective factor's complexity in comparison to other factors, but is irrelevant to a project; the **Value** field assesses each factor's role within a project. The supplied factors and their associated weights are defined by the *Use Case Points Method*, although they can be adjusted to suit a project's specific requirements.

Value

For most purposes, the only table column requiring adjustment is **Value**, which indicates the degree of influence a particular factor has over the project. As a suggested gauge, a value of **0** indicates no influence, **3** indicates average influence and **5** indicates strong influence.

1.3 Estimating Project Size

Note:

This technique is of value only once you have developed a couple of known projects to use as a baseline. Please **DO NOT** use the provided 'guesstimates' as a real world measure until you have some real world base lines to measure against.

Enterprise Architect uses a simple estimation technique based on the number of Use Cases to be built, the difficulty level of those Use Cases, some project environment factors and some build parameters. Once the parameters are set up and the Use Cases defined, open the **Use Case Metrics** dialog by:

- Navigating to the package of interest and selecting the **Project | Use Case Metrics** menu option, or
- Right-clicking on the package of interest in the **Project Browser** and selecting the **Documentation | Package Metrics** context menu option.

Use Cases Root Package: <input type="text" value="Manage Users"/> <input type="button" value="Reload"/>		Technical Complexity Factor Unadjusted TCF Value (UTV): <input type="text" value="47"/> TCF Weight Factor (TWF): <input type="text" value="0.01"/> TCF Constant (TC): <input type="text" value="0.6"/> TCF = TC + (TWF x UTV): <input type="text" value="1.07"/>											
<input type="button" value="Phase like"/> * <input type="text"/>	Bookmarked: <input type="text" value="All"/>	Environment Complexity Factor Unadjusted ECF Value (UEV): <input type="text" value="21.5"/> ECF Weight Factor (EWF): <input type="text" value="-0.03"/> ECF Constant (EC): <input type="text" value="1.4"/> ECF = EC + (EWF x UEV): <input type="text" value="0.755"/>											
<input type="button" value="Keyword like"/> <input type="text"/>	Use Cases: <input type="text" value="0"/> <input type="checkbox"/> Include Actors	Unadjusted Use Case Points (UUCP) = Sum of Complexity <input type="text" value="0"/> Ave Hours per Use Case <input type="text" value="10"/>											
<table border="1"> <thead> <tr> <th>Package</th> <th>Name</th> <th>Type</th> <th>Complexity</th> <th>Phase</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;"> </td> </tr> </tbody> </table>				Package	Name	Type	Complexity	Phase					
Package	Name	Type	Complexity	Phase									
Easy: -2147483648 Med: -2147483648		Total Estimate Use Case Points (UCP) = UUCP * TCF * ECF = <input type="text" value="0"/> * <input type="text" value="1.07"/> * <input type="text" value="0.755"/> = <input type="text" value="0"/> UCP Estimated Work Effort (hours) = <input type="text" value="10"/> * <input type="text" value="0"/> = <input type="text" value="0"/> Hours Estimated Cost = EWE * Default hourly Rate = <input type="text" value="0"/> * <input type="text" value="40"/> = <input type="text" value="0"/> Cost											
<input type="button" value="Re-Calculate"/>		<input type="button" value="Report"/> <input type="button" value="View Report"/> <input type="button" value="Default Rate"/> <input type="button" value="Close"/> <input type="button" value="Help"/>											

Option	Use to
Root Package	Confirm the root package in the hierarchy. All Use Cases under here could potentially be included in the report.
Reload	Re-run the search, usually after you change the filter criteria.
Phase like	Include Use Cases with a phase that matches the wildcard value in the field (use * to match any characters, for example 1.* for 1.1 and 1.2).
Keyword like	Include Use Cases with a keyword that matches the wildcard value in the field (use * to match any characters).
Use Cases	Check the total count of Use Cases in estimate.
Technical Complexity Factor	Review the parameters that describe the degree of technical complexity of the project. While the unadjusted TCF value comes from the Technical Complexity Factor ^[3] tab of the Metrics and Estimation Types dialog, the other values compose the Use Case Points Method formula. Modify these fields with caution. The final project estimate is directly proportional to the TCF.
Environment Complexity Factor	Review the parameters that calculate the degree of environmental complexity of the project, from factors such as programmer motivation or experience. The listed parameters compose the formula calculating the ECF, defined by the Use Case Points Method; the only parameter affected by the project is the unadjusted ECF value, derived from the Environment Complexity Factors ^[5] tab of the Metrics and Estimation Types dialog. The final project estimate is directly proportional to the ECF.
Unadjusted Use Case Points (UUCP)	Check the sum of the Use Case complexity numbers.
Ave Hours per Use Case	Check the average of the number of hours assigned to easy, medium and difficult Use Cases; for information purposes only.

Option	Use to
Total Estimate	Review the detailed breakdown of the final figure. Note that you must tailor the hours per Use Case point figure to the level that matches your type of project and capability based on known previous project outcomes.
Default Rate	Set the default hours fed into the final calculation.
Re-Calculate	Re-run the estimate, usually after you change the hours or Use Case point number.
Report	Produce a rich text formatted report from the current estimate.

1.4 Default Hours

Set the default hour rate per adjusted Use Case point using the **Default Hour Rate** tab of the **Estimation Factors** dialog. To access this tab:

- Click on the **Default Rate** button on the [Use Case Metrics](#) dialog (displays the tab as the only tab of the **Settings** dialog), or
- Select the **Settings | Estimation Factors** menu option and click on the **Default Hour Rate** tab.

Type values in the **Duration** and **Hourly Rate** fields; click on the **OK** button to save the current values.

Notes:

- The values you enter are stored as local settings on your computer only.
- This option is also active in the 'Lite', read-only version of Enterprise Architect.

Setting an hourly rate is the most difficult factor in an accurate estimation. Typical ranges can vary from 10 to 30 hours per Use Case point. Studying the *Use Case Points Method*, from which this variable is defined, can help you to understand its role in the estimation and facilitate selection of a suitable initial value. The best way to estimate this value is through analysis of previous completed projects. By calculating the project estimation on a completed project for which the Use Cases and environment are configured within Enterprise Architect, you can adjust the hour rate to render an appropriate value for your unique work environment.

2 Resource Management

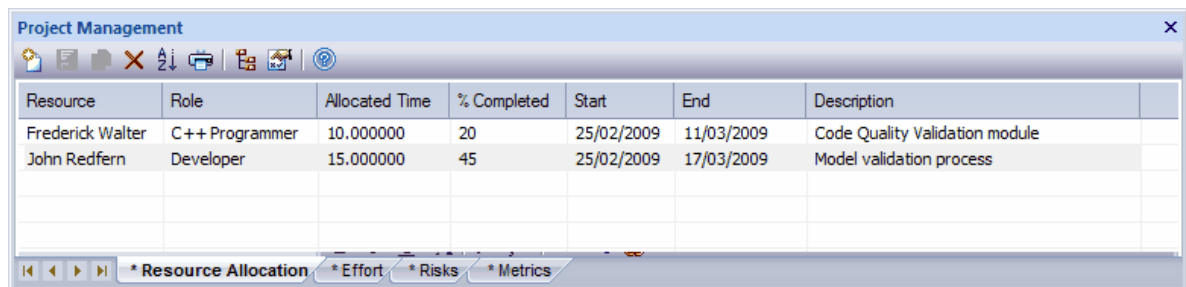
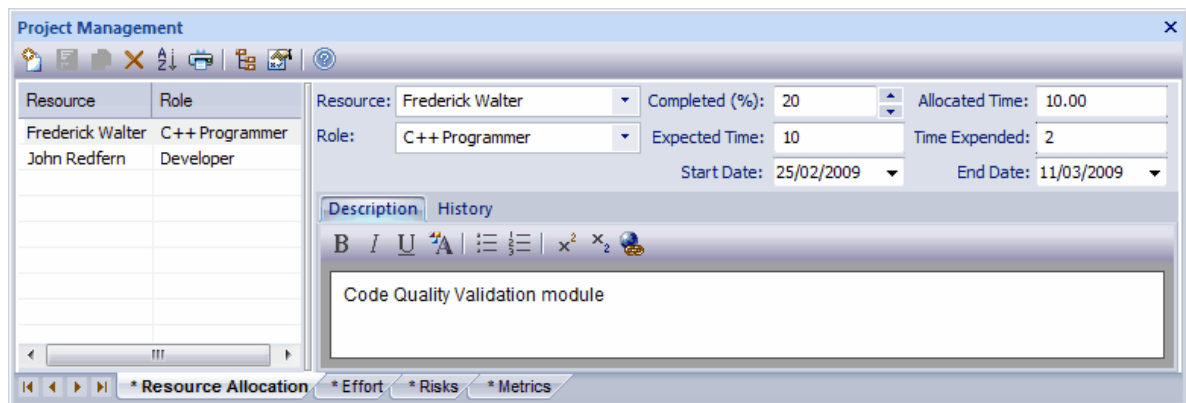


What is a Resource?

Resources are the people who work on a project. They can be assigned roles and allocated tasks, which enables tracking of effort and estimation of time to complete.

Project Management Window

Resources are added, modified and deleted from the **Project Management** window. To access this window, select the **View | Other Element Tools | Project Management** menu option, or press **[Ctrl]+[Shift]+[7]**. The window has two formats, as illustrated below - *Item* mode and *List* mode respectively.



Toggle between these modes using the **Show/Hide Properties** button in the window toolbar. The tabs toggle between Item mode and List mode independently.

The asterisk on a tab indicates that the tab contains saved information. If there is no information for a category of item, or the information has not yet been saved, its tab has no asterisk.

What to Do?

To find out more information about Project Resource Management tasks, use the following guide:

- To allocate a resource to an element, see the [Resource Allocation](#)^[10] topic
- To record additional project management information for an element, see:
 - the [Effort Management](#)^[11] topic (record effort expended on the element)
 - the [Risk Management](#)^[12] topic (record risk associated with the element)

- the [Metrics](#)^[13] topic (record metrics measured for an element)
- To obtain a report of resource allocation details, see the [Resource Report](#)^[14] topic
- To configure Project Management data and populate the drop-down lists used on the **Project Management** dialog tabs, see the following topics:
 - *Roles* (see the *Reference Data* topic in *UML Model Management*)
 - *Clients* (see the *Reference Data* topic in *UML Model Management*)
 - [Effort Types](#)^[15]
 - [Metric Types](#)^[16]
 - [Risk Types](#)^[17]
- To find out about the functions of the **Project Management** toolbar, see the *Project Management Window* topic in *Using Enterprise Architect - UML Modeling Tool*.

Note:

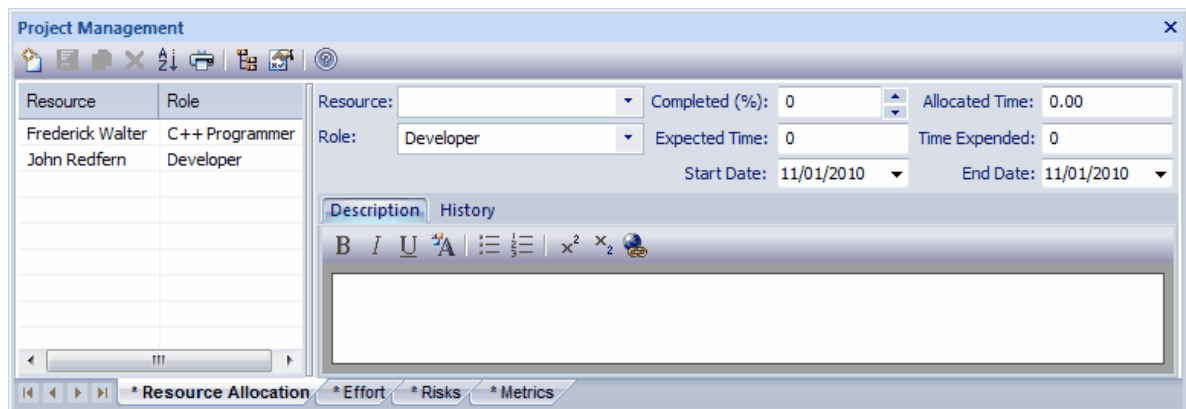
In the Corporate, Business and Software Engineering, System Engineering and Ultimate editions of Enterprise Architect, if security is enabled you must have **Manage Project Information** permission to update and manage project resources, effort, metrics and risks. See *User Security in UML Models*.

2.1 Resource Allocation

Enterprise Architect enables you to connect a named resource in a named role to a given model element. This enables the Project Manager to track how far development of required components and Classes has progressed (provided the team members keep their figures up to date).

To enter *resource allocation* details for an element, follow the steps below:

1. Select the element in the **Project Browser**.
2. Select the **View | Other Element Tools | Project Management** menu option. The **Project Management** window displays, showing the **Resource Allocation** tab.
3. Click on the **New** icon on the **Project Management** window toolbar.




The **Resource Allocation** tab enables you to enter the following data:

- The name of the resource (click on the drop-down arrow and select, or type the name in)
- The role of the resource (click on the drop-down arrow and select, or type the name in)
- The start and end date for the availability of the resource
- The time allocated to the resource
- The percentage of the task the resource has completed
- The expected time allocated to the resource
- The actual time expended by the resource
- A description of the work being done by the resource (this text is also displayed in the **Notes** window; it cannot be edited in that window)
- Notes on the activity history of the resource (this text is also displayed in the **Notes** window; it cannot be edited in that window).

For information on the **Notes** window, see *Using Enterprise Architect - UML Modeling Tool*.

To edit existing Resource Allocation items for this element, click on the required item in the:

- list panel to the left of the window, in Item mode
- list, in List mode, or
- **Project Management** folder in the **Element Browser** window (see *Using Enterprise Architect - UML*

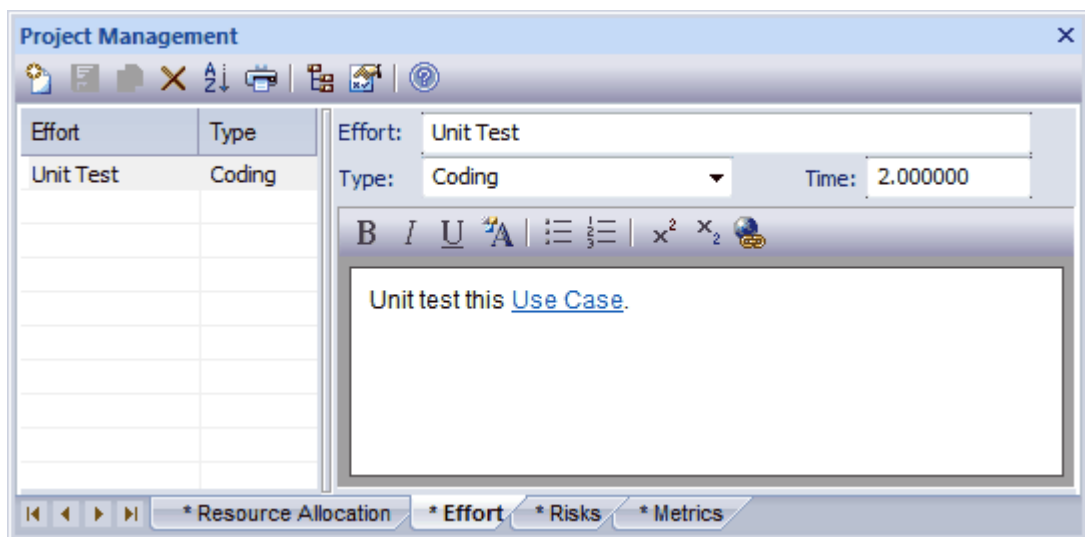
Modeling Tool); if this window is not displayed, click on the  icon in the **Project Management** window toolbar. Resource Allocation item icons have an **R** in the bottom right corner.

To change the element to which to allocate resources, select the required element in the **Project Browser**.

2.2 Effort Management

To enter *effort* details for an element, follow the steps below:

1. Select the element in the **Project Browser**.
2. Select the **View | Other Element Tools | Project Management** menu option. The **Project Management** window displays, showing the **Resource Allocation** tab.
3. Click on the **Effort** tab.
4. Click on the **New** icon on the **Project Management** window toolbar.




The **Effort** tab enables you to enter the following data:

- A name for the effort (short description)
- The type of effort (click on the drop-down arrow and select, or type the name in; typed names are not added to the [global effort type](#) ^[15] list)
- The time the effort will expend
- Some notes on the effort (this text is also displayed in the **Notes** window; it cannot be edited in that window).

For information on the **Notes** window, see *Using Enterprise Architect - UML Modeling Tool*.

To edit existing Effort items for this element, click on the required item in the:

- list panel to the left of the window, in Item mode
- list, in List mode, or
- **Project Management** folder in the **Element Browser** window (see *Using Enterprise Architect - UML*

Modeling Tool); if this window is not displayed, click on the  icon in the **Project Management** window toolbar. Effort item icons have an **E** in the bottom right corner.

To change the element to which to assign effort, select the required element in the **Project Browser**.

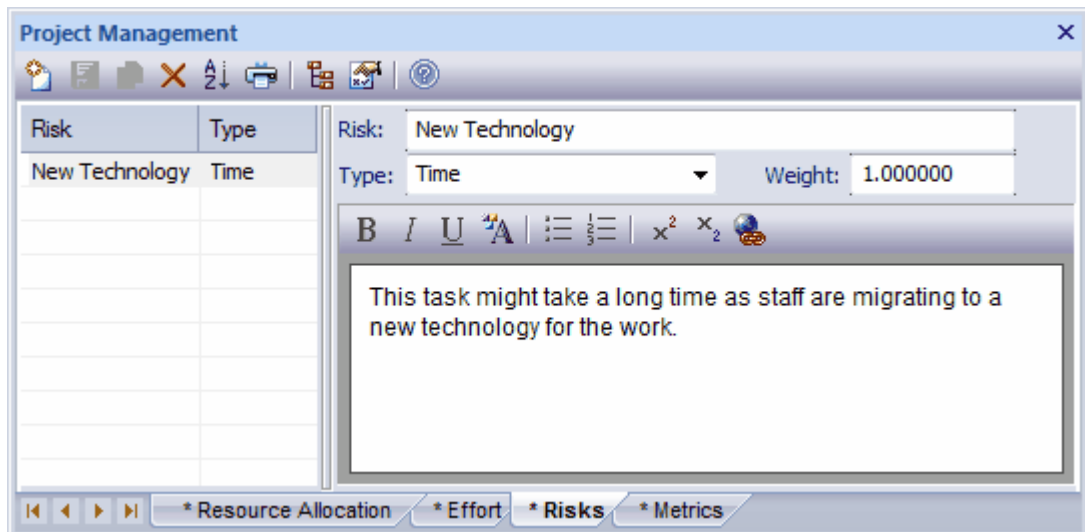
Notes:

- The drop-down arrow on the **Type** field displays a list of effort types as defined on the **Effort** tab of the **Metric and Estimation Types** dialog. If required, you can type in alternative effort types, but these are not added to the drop-down list of defined types.
- Although Enterprise Architect does not currently provide detailed reports on effort within a model, you can use the Automation Interface or similar tools to create your own custom reports based on effort information you enter; see the *Enterprise Architect Object Model* topic in *SDK for Enterprise Architect*.

2.3 Risk Management

To enter risk details for an element, follow the steps below:

1. Select the element in the **Project Browser**.
2. Select the **View | Other Element Tools | Project Management** menu option. The **Project Management** window displays, showing the **Resource Allocation** tab.
3. Click on the **Risks** tab.
4. Click on the **New** icon on the **Project Management** window toolbar.




The **Risks** tab enables you to enter the following data:

- A name for the risk (short description)
- The type of risk (click on the drop-down arrow and select, or type the name in; typed names are not added to the [global risk type](#) list)
- A weighting for the risk
- Some notes on the risk (this text is also displayed in the **Notes** window; it cannot be edited in that window).

For information on the **Notes** window, see *Using Enterprise Architect - UML Modeling Tool*.

To edit existing risk items for this element, click on the required item in the:

- list panel to the left of the window, in Item mode
- list, in List mode, or
- **Project Management** folder in the **Element Browser** window (see *Using Enterprise Architect - UML*

Modeling Tool); if this window is not displayed, click on the  icon in the **Project Management** window toolbar. Risk item icons have an **Ri** in the bottom right corner.

To change the element to which to allocate resources, select the required element in the **Project Browser**.

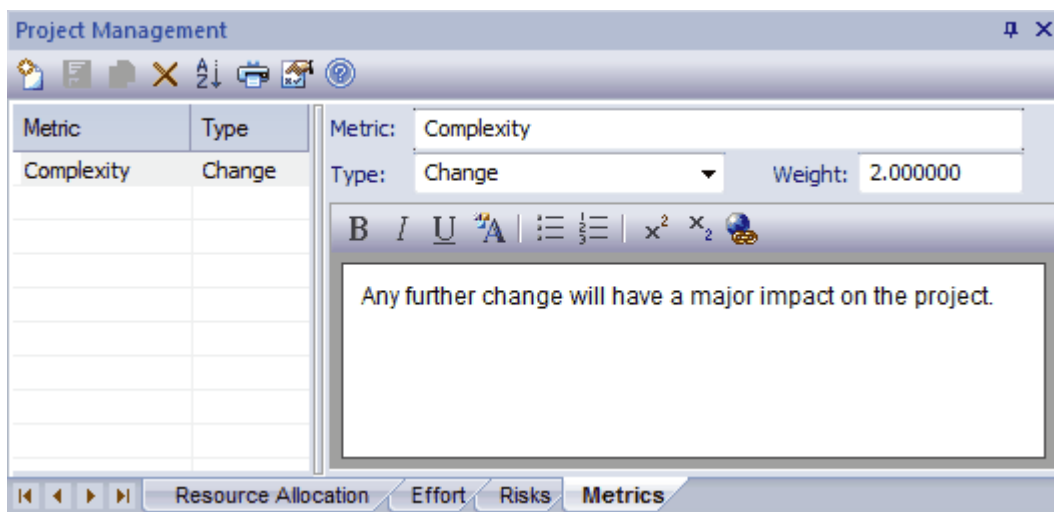
Note:

Although Enterprise Architect does not currently provide detailed reports on risks within a model, you can use the Automation Interface or similar tools to create your own custom reports based on risk information you enter; see the *Enterprise Architect Object Model* topic in *SDK for Enterprise Architect*.

2.4 Metrics

To enter metrics for an element, follow the steps below:

1. Select the element from the **Project Browser**.
2. Select the **View | Other Element Tools | Project Management** menu option. The **Project Management** window displays, showing the **Resource Allocation** tab.
3. Click on the **Metrics** tab.
4. Click on the **New** icon on the **Project Management** window toolbar.




The **Metrics** tab enables you to enter the following data:

- A name for the metric (short description)
- The type of metric (click on the drop-down arrow and select, or type the name in; type names are not added to the [global metric type](#) list)
- A weighting for the metric
- Some notes on the metric (this text is also displayed in the **Notes** window; it cannot be edited in that window).

For information on the **Notes** window, see *Using Enterprise Architect - UML Modeling Tool*.

To edit existing Metrics items for this element, click on the required item in the:


- list panel to the left of the window, in Item mode
- list, in List mode, or
- **Project Management** folder in the **Element Browser** window (see *Using Enterprise Architect - UML*

Modeling Tool); if this window is not displayed, click on the  icon in the **Project Management** window toolbar. Metric item icons have an **M** in the bottom right corner.

To change the element to which to allocate resources, select the required element in the **Project Browser**.

To edit existing metric items for this element, click on the required item in the:

- list panel to the left of the window, in Item mode
- list, in List mode, or
- **Project Management** folder in the **Element Browser** window (Metric item icons have an **M** in the bottom

right corner). If this window is not displayed, click on the  icon in the **Project Management** window toolbar.

To change the element to which to assign metrics, select the required element in the **Project Browser**.

Note:

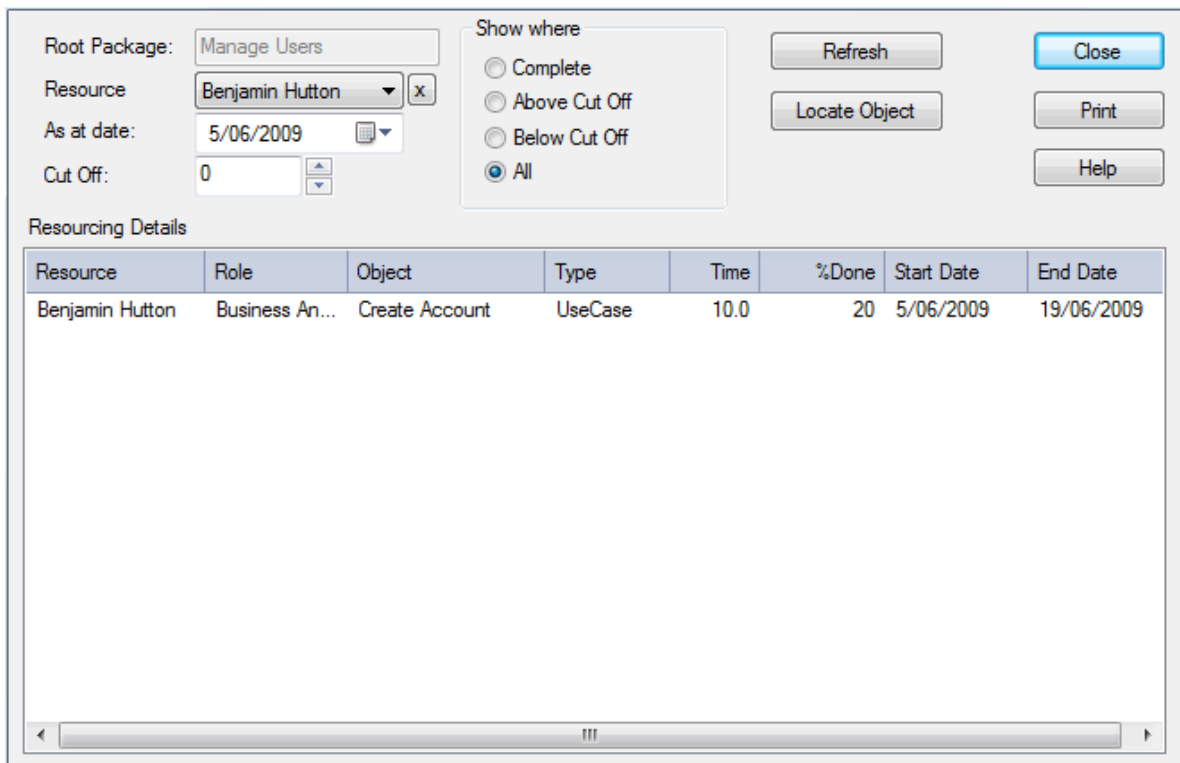
Although Enterprise Architect does not currently provide detailed reports on metrics within a model, you can use the Automation Interface or similar tools to create your own custom reports based on metric information you enter; see the *Enterprise Architect Object Model* topic in *SDK for Enterprise Architect*.

2.5 Resource Report

To generate a resource report on a package, either:

- In the **Project Browser**, right-click on the package to create a report for and, from the context menu, select the **Documentation | Resource Allocation** option, or
- If the diagram currently active belongs to the package to create a report for, select the **Project | Documentation | Resource and Tasking Details** menu option.

The **Resource and Tasking Details** dialog displays a list of all elements that have resources allocated to them. The result list includes the resource allocated, the start and end dates, the percentage complete and other relevant information. You can print out the results if required.



Resource	Role	Object	Type	Time	%Done	Start Date	End Date
Benjamin Hutton	Business An...	Create Account	UseCase	10.0	20	5/06/2009	19/06/2009

Option	Use to
Root Package	Confirm the name of the root package for which resourcing is being determined.
Resource	Change the (optional) name of a specific resource assigned to the project.
As At Date	Select the date to run the resource report for.
Cut Off	Set the percentage complete limit to include or exclude resource details; see Show Where .

Option	Use to
Show Where	Show resourcing where percentage complete is Complete , Above the cut-off , Below the cut-off , or any of these three.
Refresh	Refresh the form.
Locate Object	(Click on an entry in the report.) Find the selected element from the results list in the Project Browser .
Print	Print the report.
Resourcing Details	Review the list of resources that meet the search criteria.

2.6 Effort Types

You can specify the *effort types* used when assigning effort to an element in Enterprise Architect, using the **Effort** tab of the [Project Indicators](#) dialog. Creating an effort type using this dialog adds to a global list of effort types that can be added to any element in the model. This list of types displays in the **Type** field drop-down list on the **Effort** tab of the [Project Management](#) ² window.

To open the [Project Indicators](#) dialog, select the **Settings | Project Indicators** menu option. Click on the **Effort** tab.

The screenshot shows the 'Effort' tab of the 'Project Indicators' dialog. It features three input fields: 'Effort:' with the value 'Construction', 'Description:' with the value 'Design and build system components', and 'Weight:' with the value '1'. Below these fields is a text area containing the description: 'The construction phase is concerned with designing and building the components necessary to implement the system as specified.' To the right of the text area are three buttons: 'New', 'Save', and 'Delete'. Below the text area is a table titled 'Defined Effort Types' with the following data:

Name	Description	Weight
Analysis	Analyzing System	1.0
Coding	Developing code	1.0
Construction	Design and build system components	1.0
Design	Designing specifications	1.0
Elaboration	Refine specification. Set up project	1.0
Transition	Implementation, acceptance testing	1.0

At the bottom of the dialog are two buttons: 'Close' and 'Help'.

To create a new effort type, click on the **New** button, or to edit an existing effort type, click on the effort type name in the **Defined Effort Types** list. Complete the fields as follows:

- In the **Effort** field type the name of the effort type
- In the **Description** field type a short description of the effort type
- In the **Weight** field type the weighting to apply to the effort type
- In the Note field, type any additional information on the effort type
- Click on the **Save** button.

Notes:

- Although Enterprise Architect does not currently provide detailed reports on effort within a model, you can use the Automation Interface or similar tools to create your own custom reports based on effort information you enter; see the *Enterprise Architect Object Model* topic in *SDK for Enterprise Architect*.
- You can transport effort types between models, using the **Export Reference Data** and **Import Reference Data** options on the **Tools** menu; see the *Reference Data* topic in *UML Model Management*.

2.7 Metric Types

You can specify the *metric types* used when assigning metrics to an element in Enterprise Architect, using the **Metric** tab of the **Project Indicators** dialog. Creating a metric using this dialog creates a global list of metrics that can be added to any element in the model. You can define a metric on other screens, such as the **Metrics** ¹³ tab of the **Project Management** window, but such metrics are not added to the global list.

Select the **Settings | Project Indicators** menu option. On the **Project Indicators** dialog, click on the **Metric** tab.

Metric Type:	Description:	Weight:
Change	Change control, stability	1

Change requests,

Defined Metrics

Name	Description	Weight
Breakage	Convergence, rework, software scrap	1.0
Change	Change control, stability	1.0
Cost	Budget, cost, expenditure	1.0
Progress	Iteration, planning, actuals	1.0
Team	Staffing, team dynamics	1.0

To create a new metric type, click on the **New** button, or to edit an existing metric type, click on the metric type name in the **Defined Metrics** list. Complete the fields as follows:

- In the **Metric Type** field type the name of the metric type
- In the **Description** field type a short description of the metric type
- In the **Weight** field type the weighting to apply to the metric type
- In the Note field, type any additional information on the metric type
- Click on the **Save** button.

Notes:

- Although Enterprise Architect does not currently provide detailed reports on metrics within a model, you can use the Automation Interface or similar tools to create your own custom reports based on metrics information you enter; see the *Enterprise Architect Object Model* topic in *SDK for Enterprise Architect*.
- You can transport metric types between models, using the **Export Reference Data** and **Import Reference Data** options on the **Tools** menu; see the *Reference Data* topic in *UML Model Management*.

2.8 Risk Types

You can specify the *risk types* used when assigning risk to an element in Enterprise Architect, using the **Risk** tab of the **Project Indicators** dialog. Creating a risk type using this dialog creates a global list of risk types that can be added to any element in the model. You can define a risk type on other screens, such as the **Risks** ^[12] tab of the **Project Management** window, but such risks are not added to the global list.

Select the **Settings | Project Indicators** menu option. On the **Project Indicators** dialog, click on the **Risk** tab.

The screenshot shows the 'Risk' tab of the 'Project Indicators' dialog. The 'Risk Type' field contains 'Delivery Fle', the 'Description' field contains 'Maintenance schedules', and the 'Weight' field contains '1'. A text area below these fields contains the description: 'Maintenance schedules for delivery vehicles have sometimes overlapped, restricting capacity for moving product on from the warehouse.' Below the text area are three buttons: 'New', 'Save', and 'Delete'. Below these buttons is a table titled 'Defined Risks' with the following data:

Name	Description	Weight
Delivery Fle	Maintenance schedules	1.0
Suppliers	Provision of raw materials	4.0

At the bottom right of the dialog are 'Close' and 'Help' buttons.

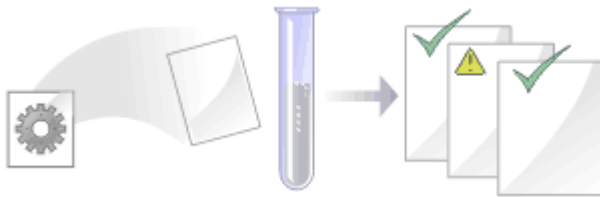
To create a new risk type, click on the **New** button, or to edit an existing risk type, click on the risk type name in the **Defined Risks** list. Complete the fields as follows:

- In the **Risk Type** field type the name of the risk type
- In the **Description** field type a short description of the risk type
- In the **Weight** field type the weighting to apply to the risk type
- In the Note field, type any additional information on the risk type
- Click on the **Save** button.

Notes:

- Although Enterprise Architect does not currently provide detailed reports on risks within a model, you can use the Automation Interface or similar tools to create your own custom reports based on risk information you enter; see the *Enterprise Architect Object Model* topic in *SDK for Enterprise Architect*.
- You can transport risk types between models, using the **Export Reference Data** and **Import Reference Data** options on the **Tools** menu; see the *Reference Data* topic in *UML Model Management*.

3 Testing



Introduction to Testing

In addition to the integrated JUnit and NUnit testing capabilities (see the *Unit Testing* topic in *Visual Execution Analyzer in Enterprise Architect*), Enterprise Architect enables you to attach arbitrarily complex tests to any model element. Keeping the model elements and the testing documentation in one integrated model significantly improves the communication between the test-team and the software developers and architects. The detailed search facilities make it easy to find failing test cases, test cases not run and tests cases that have been passed. Using the testing and search capabilities, it is easy to navigate through the model and quickly locate problem spots, design flaws and other critical issues. Enterprise Architect is not only a UML Modeling environment, it is also a complete Test Management environment.

Basic Tasks

Simple tasks that you might perform include:

- [Open the Testing Workspace](#) ^[20]
- [Use the Test Details Dialog](#) ^[21].

Categories

Typically you create:

- [Unit tests](#) ^[22] for things that are being built, such as Classes and components
- [Integration tests](#) ^[23] to test how components work together
- [System tests](#) ^[24] to ensure the system meets business requirements
- [Acceptance tests](#) ^[25] to test user satisfaction, and
- [Scenario tests](#) ^[26] to test the end-to-end suitability and functionality of the application.

Using Tests

Other tasks that you might perform when working with tests include:

- [Import a Scenario as a Test](#) ^[27]
- [Move or Copy Tests Between Test Types](#) ^[27]
- [Import a Test from Other Elements](#) ^[29]
- [Import a Responsibility or Constraint as a Test](#) ^[30]
- [Create a Maintenance Item from a Test](#) ^[31]
- [Generate Test Details Report](#) ^[32]
- [Show Test Script Compartments](#) ^[32]
- [Create Test Documentation](#) ^[33].

Note:

Most of the tasks identified above relate to a tests for a single element. You can make a set of tests available to a number of elements by performing the above tasks on a Test Case element and then associating that Test Case with each of the other elements. The Test Case element helps to make tests more visible in diagrams, the **Project Browser**, windows and searches. See the *UML Elements* topic in the *UML Dictionary*.

3.1 The Testing Workspace

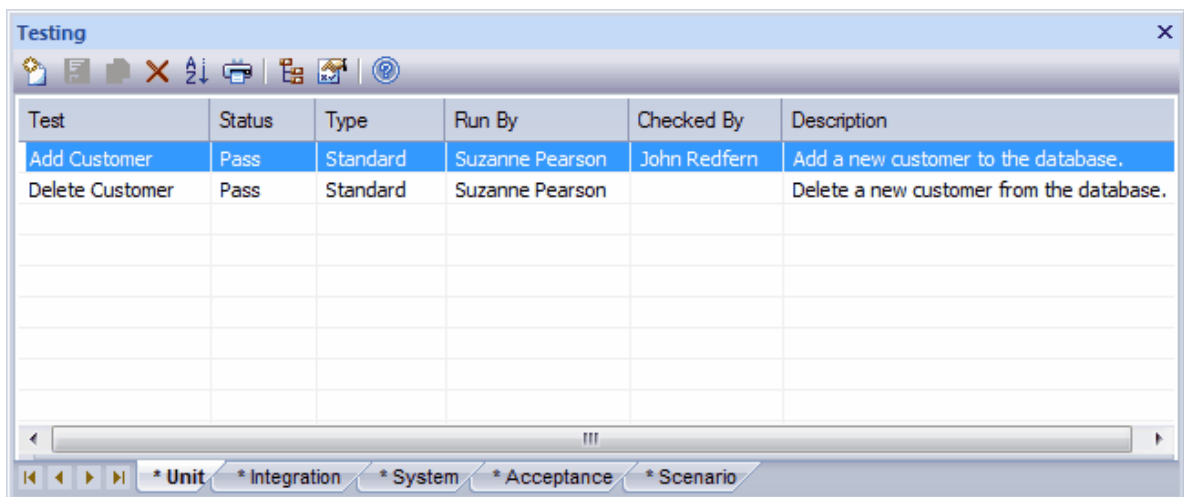
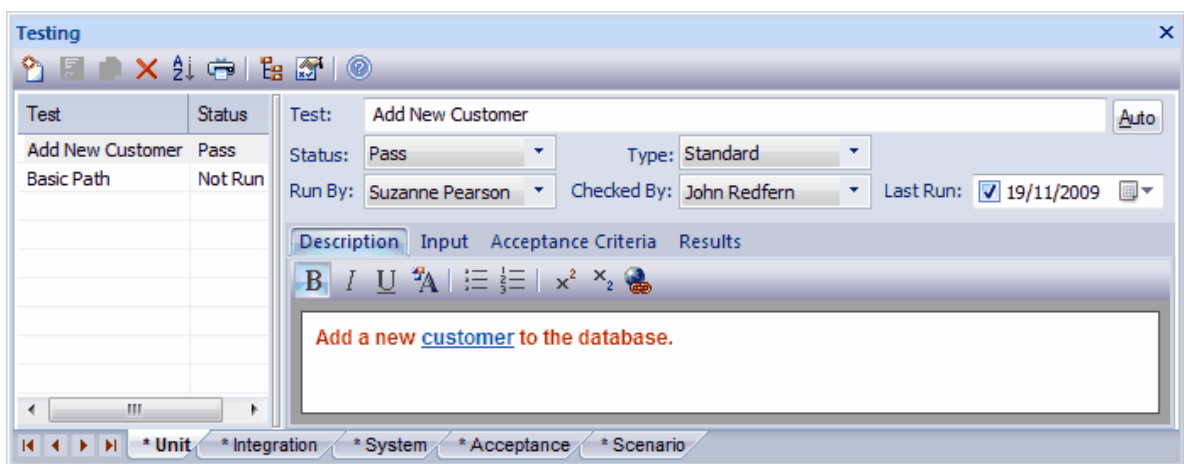
The **Testing** window, or Workspace, provides a quick and convenient method of working with element tests. When you select an element in a diagram or in the **Project Browser**, if the **Testing** window is visible the lists of tests for that element are loaded ready for modification or addition.

Note:

In the Corporate, Business and Software Engineering, System Engineering and Ultimate editions of Enterprise Architect, if security is enabled you must have **Manage Tests** permission to update and delete test records. See *User Security in UML Models*.

To open the **Testing** window, select the **View | Testing** menu option. Alternatively, press **[Alt]+[3]**. The window can be docked to the application workspace.

The window has two formats, as illustrated below - *Item* mode and *List* mode respectively.



To toggle between the modes, click on the **Show/Hide Properties** button in the window toolbar.

Click on the **New** icon in the window toolbar to add new items. In Item mode, this clears the fields for new data. In List mode, this displays the **Test details** dialog. By clicking on the **Auto** button in Item mode or on the **Test details** dialog, you can apply an automatic naming/numbering nomenclature that you have previously defined (see the *Element Tasks* section in *UML Modeling With Enterprise Architect - UML Modeling Tool*).

There are five tabs along the base of the window; one for each of the following types of testing:

- [Unit testing](#)^[22]
- [Integration testing](#)^[23]

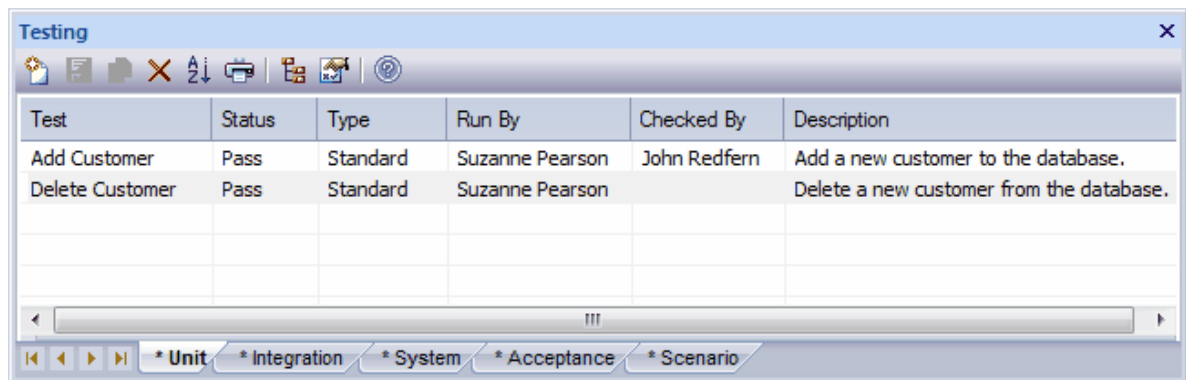
- [System testing](#) ^[24]
- [Acceptance testing](#) ^[25]
- [Scenario testing](#) ^[26]

The asterisk on a tab indicates that the tab contains saved information. If there is no information for a type of test, or the information has not yet been saved, its tab has no asterisk.

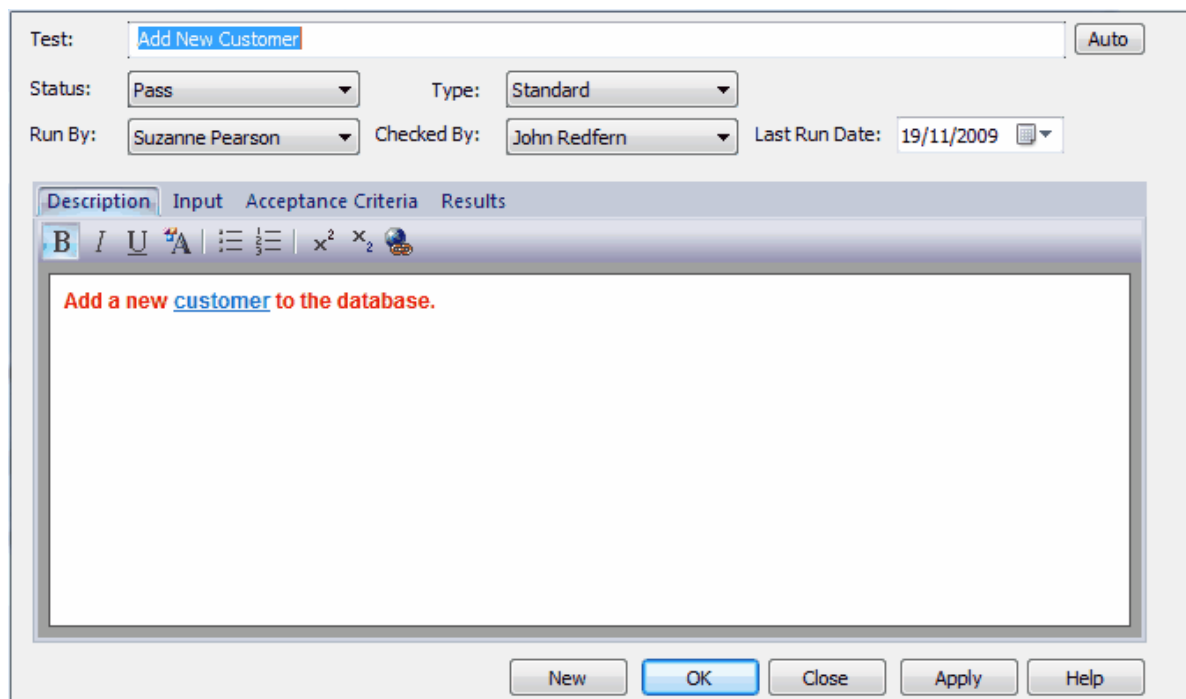
The tabs toggle between Item mode and List mode independently.

3.2 The Test Details Dialog

The **Test details** dialog opens from the **Testing** window in *List* mode. (The **Testing** window displays as shown below in List mode. If it does not display like this, click on the **Show/Hide Properties** icon in the window toolbar.)



Double-click on an existing test case or click on the **New** icon in the window toolbar. The **Test Details** dialog displays.



Notes:

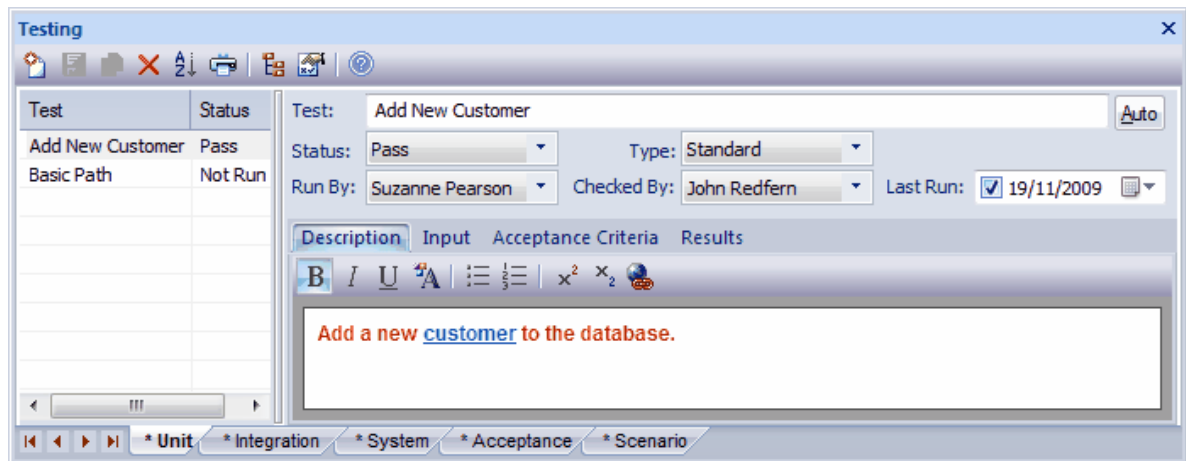
- Add multiple test cases in one batch by using the **New** and **Apply** buttons.
- You can format the text in the **Description**, **Input**, **Acceptance Criteria** and **Results** tabs using the **Rich Text Notes** toolbar at the top of the field (see the *Workspace Toolbars* topic in *Using Enterprise Architect - UML Modeling Tool*). This text is also reflected in the **Notes** window, but cannot be edited there.

3.3 Unit Testing

Use Unit Testing to test Classes, Components and other elements as programmers build them.


The **Unit** testing tab displays in the **Testing** window by default. To open the **Testing** window, select the **View | Testing** menu option. Open a diagram or the **Project Browser** and select the required element.

If any Unit tests exist, the first Test item for the element is shown in the **Testing** window in Item mode, and all items are listed either in the panel to the left of the window, or in the window in List mode.



Option	Use to
Test	Specify the name of the test.
Status	Click on the drop-down arrow and select the current status of the test.
Type	Click on the drop-down arrow and select the type of test.
Run By	Click on the drop-down arrow and select the name of the person who ran the test.
Checked By	Click on the drop-down arrow and select the name of the person who checked the test run.
Last Run	Click on the drop-down arrow and select the date on which the test was last run.
Description	Type a description of the test. You can format the text using the Rich Text Notes toolbar at the top of the field. (See the <i>Workspace Toolbars</i> topic in <i>Using Enterprise Architect - UML Modeling Tool</i> .) This text is also reflected in the Notes window, but cannot be edited there.
Input	Type in the input data.
Acceptance Criteria	Type the acceptance or test success conditions.
Results	Type the results of the last test.

To edit existing Unit Test items for this element:

- Click on the item in the left-hand panel in Item mode
- Double-click on the item in List mode to display the [Test Details](#) dialog, or
- Click on the required item in the *Testing* folder in the [Element Browser](#) window (see *Using Enterprise Architect - UML Modeling Tool*); if this window is not displayed, click on the  icon in the [Testing](#) window toolbar. Unit Test item icons have a **U** in the bottom right corner.

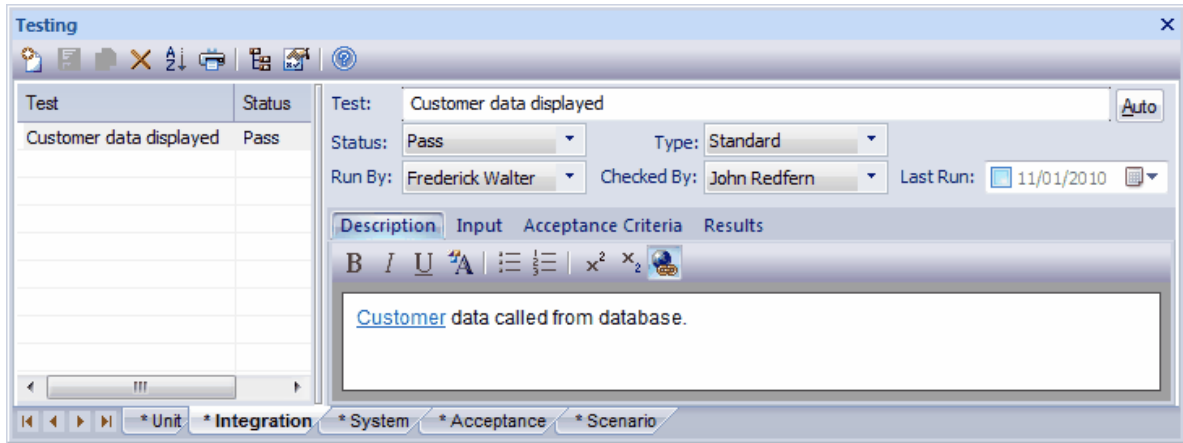
To change the element for which to create test items, click on the required element in the [Project Browser](#).

3.4 Integration Testing

Use Integration Testing to test how the constructed components work together.


To display Integration Testing details select the **View | Testing** menu option to display the [Testing](#) window. Open a diagram or the [Project Browser](#) and select the required element. Click on the [Integration](#) tab.

If any Integration tests exist, the first Test item for the element is shown in the [Testing](#) window in Item mode, and all items are listed either in the panel to the left of the window, or in the window in List mode.



Option	Use to
Test	Specify the name of the test.
Status	Click on the drop-down arrow and select the current status of the test.
Type	Click on the drop-down arrow and select the type of test.
Run By	Click on the drop-down arrow and select the name of the person who ran the test.
Checked By	Click on the drop-down arrow and select the name of the person who checked the test run.
Last Run	Click on the drop-down arrow and select the date on which the test was last run.
Description	Type a description of the test. You can format the text using the Rich Text Notes toolbar at the top of the field. (See the <i>Workspace Toolbars</i> topic in <i>Using Enterprise Architect - UML Modeling Tool</i> .) This text is also reflected in the Notes window, but cannot be edited there.
Input	Type in the input data.
Acceptance Criteria	Type the acceptance or test success conditions.
Results	Type the results of the last test.

To edit existing Integration Test items for this element:

- Click on the item in the left-hand panel in Item mode
- Double-click on the item in List mode to display the [Test Details](#) dialog, or
- Click on the required item in the *Testing* folder in the [Element Browser](#) window (see *Using Enterprise Architect - UML Modeling Tool*); if this window is not displayed, click on the  icon in the [Testing](#) window toolbar. Integration Test item icons have an **I** in the bottom right corner.

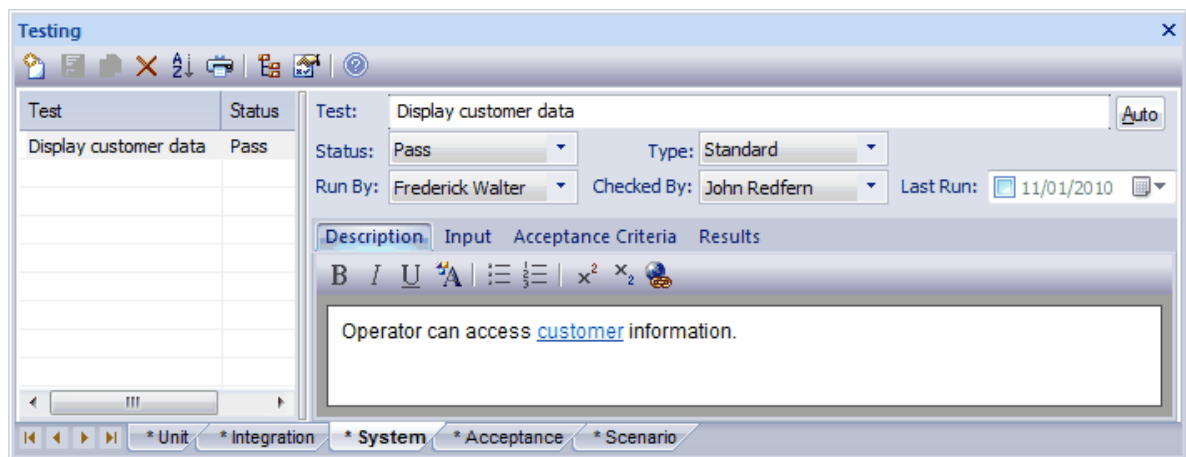
To change the element for which to create test items, click on the required element in the [Project Browser](#).

3.5 System Testing

Use System Testing to test that the system performs the right business functions correctly.


To display System Testing details select the **View | Testing** menu option to display the [Testing](#) window. Open a diagram or the [Project Browser](#) and select the required element. Click on the [System](#) tab.

If any System Tests exist, the first Test item for the element is shown in the [Testing](#) window in Item mode, and all items are listed either in the panel to the left of the window, or in the window in List mode.



Option	Use to
Test	Specify the name of the test.
Status	Click on the drop-down arrow and select the current status of the test.
Type	Click on the drop-down arrow and select the type of test.
Run By	Click on the drop-down arrow and select the name of the person who ran the test.
Checked By	Click on the drop-down arrow and select the name of the person who checked the test run.
Last Run	Click on the drop-down arrow and select the date on which the test was last run.
Description	Type a description of the test. You can format the text using the Rich Text Notes toolbar at the top of the field. (See the <i>Workspace Toolbars</i> topic in <i>Using Enterprise Architect - UML Modeling Tool</i> .) This text is also reflected in the Notes window, but cannot be edited there.
Input	Type in the input data.
Acceptance Criteria	Type the acceptance or test success conditions.
Results	Type the results of the last test.

To edit existing System Test items for this element:

- Click on the item in the left-hand panel in Item mode
- Double-click on the item in List mode to display the [Test Details](#) dialog, or
- Click on the required item in the *Testing* folder in the [Element Browser](#) window (see *Using Enterprise Architect - UML Modeling Tool*); if this window is not displayed, click on the  icon in the [Testing](#) window toolbar. System Test item icons have an **Sy** in the bottom right corner.

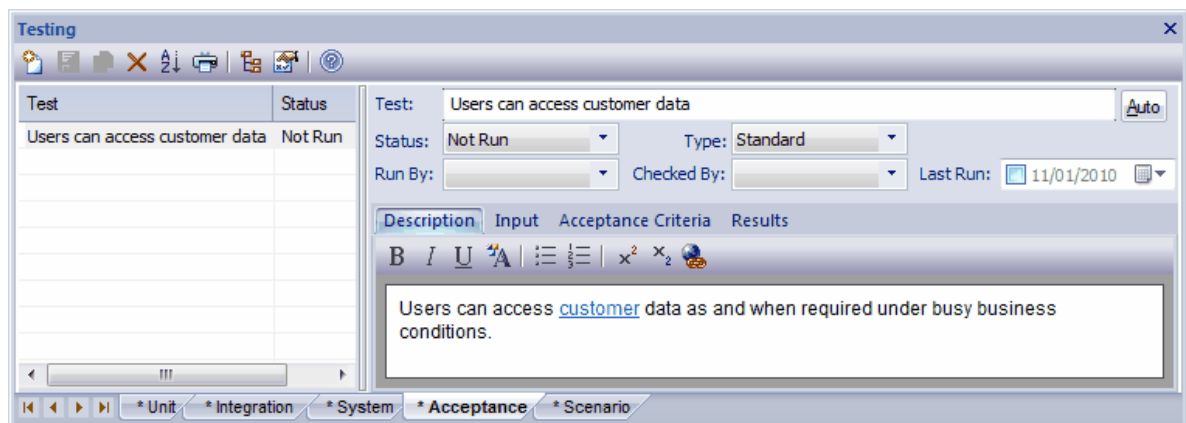
To change the element for which to create test items, click on the required element in the [Project Browser](#).

3.6 Acceptance Testing

Use Acceptance Testing to ensure that users are satisfied with the system.

To display Acceptance Testing details select the **View | Testing** menu option to display the [Testing](#) window. Open a diagram or the [Project Browser](#) and select the required element. Click on the [Acceptance](#) tab.


If any Acceptance Tests exist, the first Test item for the element is shown in the [Testing](#) window in Item mode, and all items are listed either in the panel to the left of the window, or in the window in List mode.



Option	Use to
Test	Specify the name of the test.
Status	Click on the drop-down arrow and select the current status of the test.
Type	Click on the drop-down arrow and select the type of test.
Run By	Click on the drop-down arrow and select the name of the person who ran the test.
Checked By	Click on the drop-down arrow and select the name of the person who checked the test run.
Last Run	Click on the drop-down arrow and select the date on which the test was last run.
Description	Type a description of the test. You can format the text using the Rich Text Notes toolbar at the top of the field. (See the <i>Workspace Toolbars</i> topic in <i>Using Enterprise Architect - UML Modeling Tool</i> .) This text is also reflected in the Notes window, but cannot be edited there.
Input	Type in the input data.
Acceptance Criteria	Type the acceptance or test success conditions.
Results	Type the results of the last test.

To edit existing Acceptance Test items for this element:

- Click on the item in the left-hand panel in Item mode

- Double-click on the item in List mode to display the [Test Details](#) dialog, or
- Click on the required item in the *Testing* folder in the [Element Browser](#) window (see *Using Enterprise Architect - UML Modeling Tool*); if this window is not displayed, click on the  icon in the *Testing* window toolbar. Acceptance Test item icons have an **A** in the bottom right corner.

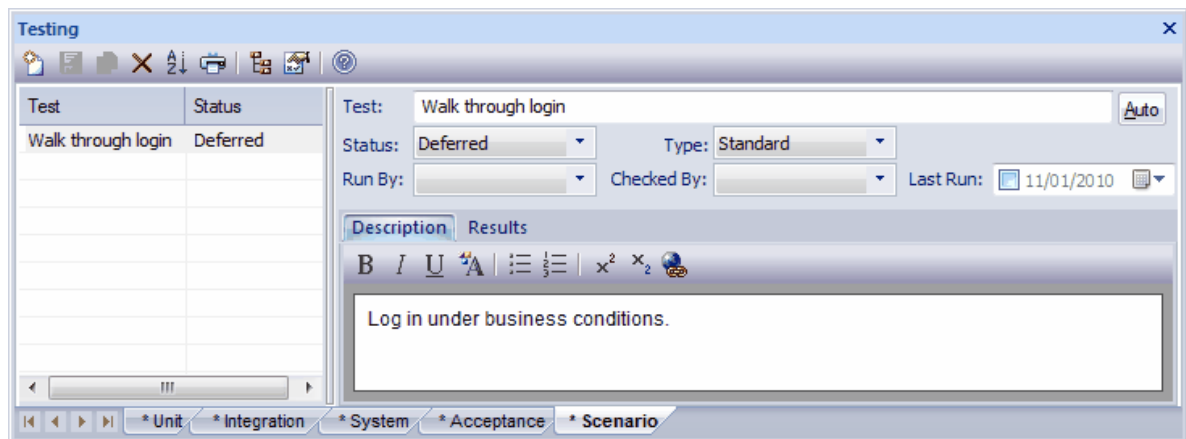
To change the element for which to create test items, click on the required element in the [Project Browser](#).

3.7 Scenario Testing

Use Scenario Testing to test the application with real-world situations and scenarios. An end-to-end test of all functions.


To display Scenario Testing details select the **View | Testing** menu option to display the *Testing* window. Open a diagram or the [Project Browser](#) and select the required element. Click on the [Scenario](#) tab.

If any Scenario Tests exist, the first Test item for the element is shown in the *Testing* window in Item mode, and all items are listed either in the panel to the left of the window, or in the window in List mode.



Option	Use to
Test	Specify the name of the test.
Status	Click on the drop-down arrow and select the current status of the test.
Type	Click on the drop-down arrow and select the type of test.
Run By	Click on the drop-down arrow and select the name of the person who ran the test.
Checked By	Click on the drop-down arrow and select the name of the person who checked the test run.
Last Run	Click on the drop-down arrow and select the date on which the test was last run.
Description	Type a description of the test. You can format the text using the Rich Text Notes toolbar at the top of the field. (See the <i>Workspace Toolbars</i> topic in <i>Using Enterprise Architect - UML Modeling Tool</i> .) This text is also reflected in the Notes window, but cannot be edited there.
Input	Type in the input data.
Acceptance Criteria	Type the acceptance or test success conditions.
Results	Type the results of the last test.

To edit existing Scenario Test items for this element:

- Click on the item in the left-hand panel in Item mode
- Double-click on the item in List mode to display the [Test Details](#) dialog, or
- Click on the required item in the *Testing* folder in the [Element Browser](#) window (see *Using Enterprise Architect - UML Modeling Tool*); if this window is not displayed, click on the  icon in the [Testing](#) window toolbar. Scenario Test item icons have an **Sc** in the bottom right corner.

To change the element for which to create test items, click on the required element in the [Project Browser](#).

3.8 Move or Copy Tests Between Categories

When you define a test on the [Unit](#), [Integration](#), [System](#), [Acceptance](#) or [Scenario](#) tab of the [Testing](#) window, you might decide that the test either is better suited to another category of tests, or forms a good template for tests in other categories. Enterprise Architect enables you to move or copy tests between categories.

To move or copy a test, follow the steps below:

1. Open either:
 - The [Testing](#) window, and the tab that contains the test you want to move or copy, or
 - The *Testing* folder of the [Element Browser](#) window (see *Using Enterprise Architect - UML Modeling Tool*).
2. Right-click on the required test item in the list. The item context menu displays.
3. Click on the appropriate option - **Move to** or **Copy to**. A list of test categories displays.
4. Click on the test category to which to move or copy the test. A confirmatory prompt displays.

Note:

If you move or copy a test into the Scenario category, some unassociated data could be lost.

5. Click on the **Yes** button to confirm the move or copy.
6. Click on the target tab of the [Testing](#) window to ensure that the test has been added, and make any required changes.

3.9 Import Scenario as Test

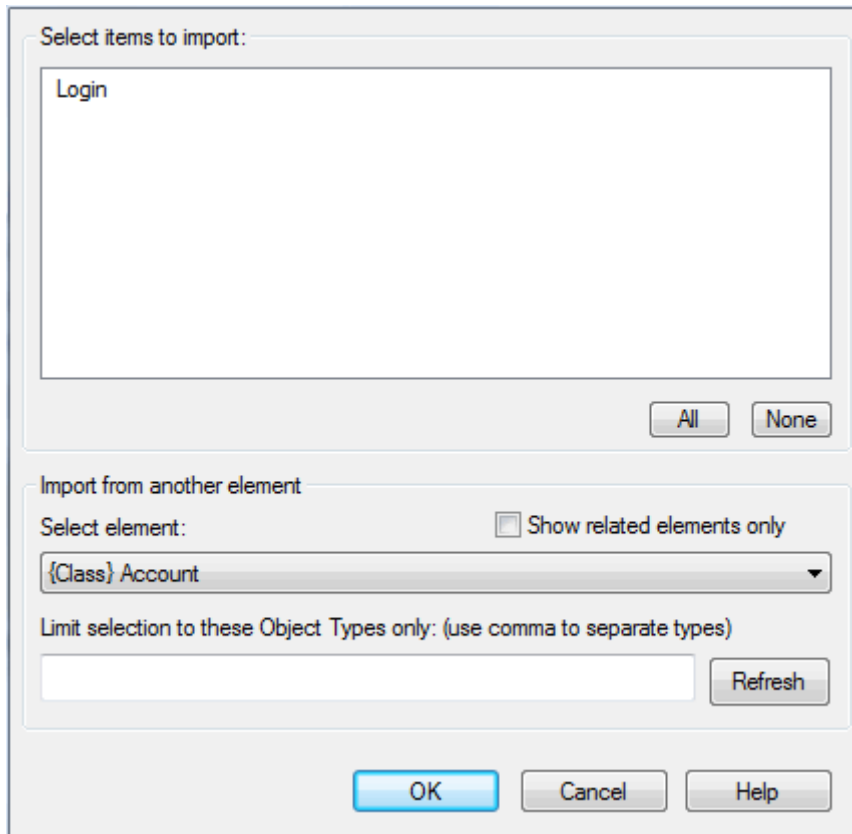
You can import a scenario from a Use Case or other element, or from all elements in a package, into the [Testing](#) window [Scenario](#) tab. This avoids having to duplicate the scenario information manually.

The scenario description is copied to the Scenario Test [Description](#) tab in the [Testing](#) window. If a scenario contains a Structured Specification, its Action steps are also copied to the [Description](#) tab under the heading **Structured Specification**.

Import Element Scenarios

To import one or more scenarios from a specific element, follow the steps below:

1. Open a diagram or the [Project Browser](#) and select the element into which to import the scenario.
2. Open either:
 - The [Testing](#) window and the [Scenario](#) tab, or
 - The *Testing* folder of the [Element Browser](#) window (see *Using Enterprise Architect - UML Modeling Tool*).
3. Right-click on the list of tests to display the context menu, and select the **Import element scenario(s)** menu option. The [Import Scenario](#) dialog displays.



4. You can import scenarios from any element in the model by clicking on the **Select element** drop-down arrow and selecting the required element. Select the scenarios to import from the **Select items to import** list.
5. Click on the **OK** button to import the selected scenario(s).

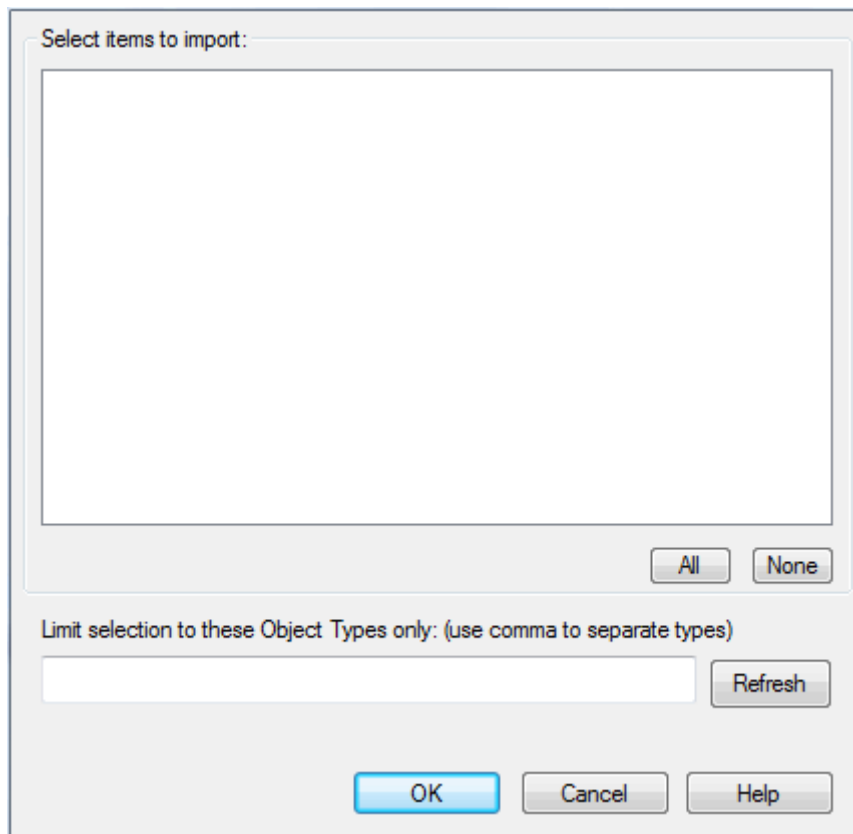
The **Import Scenario** dialog has the following additional options:

Option	Use to
Show related elements only	Filter selection to apply only to related elements.
Limit selection to these Object Types only	Type in specific element types, separated by commas, to filter for only those element types.
Refresh	Refresh the list of available scenarios.

Import Package Scenarios

To import scenarios from all elements in a package, follow the steps below:

1. Open a diagram or the **Project Browser** and select the parent package element or an element within the package.
2. Open either:
 - The **Testing** window and the **Scenario** tab, or
 - The **Testing** folder of the **Element Browser** window.
3. Right-click on the list of tests to display the context menu, and select the **Import Package Scenario(s)** menu option. The **Import Scenario** dialog displays.



This version of the **Import Scenario** dialog lists all scenarios against all elements in the package. It does not enable you to select a specific element, but does enable you to filter the list of scenarios to those from specific types of element.

4. In the **Limit selection to these Object Types only** field, type a comma-separated list of the object types for which to show scenarios. Click on the **Refresh** button.
5. Click on the **OK** button to import the scenarios from each element as test scenarios for that element.

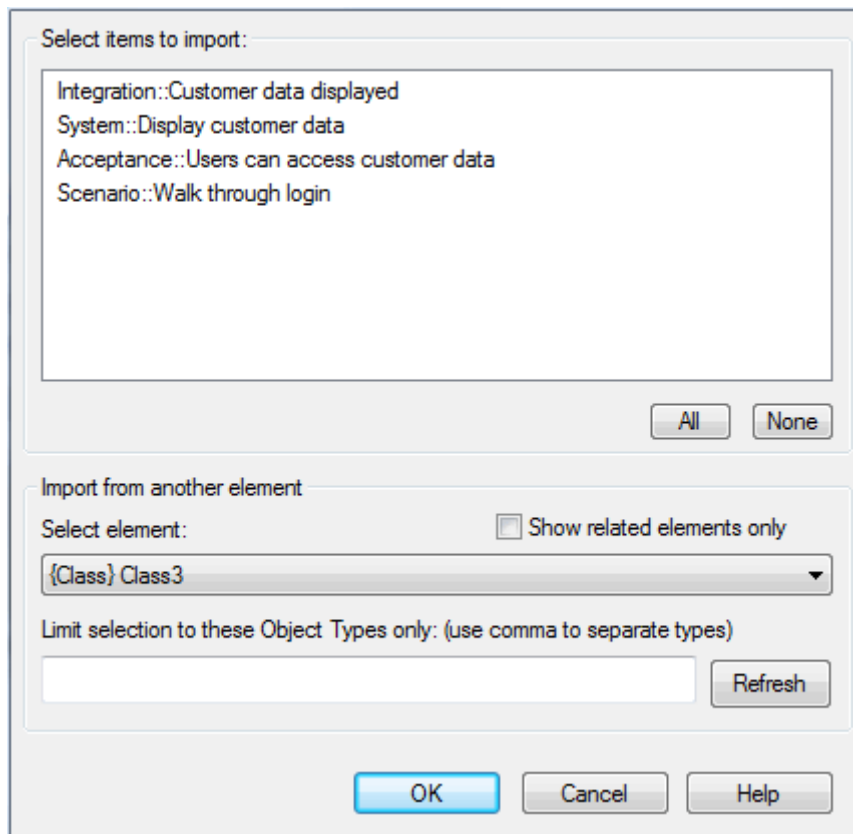
3.10 Import Test From Other Elements

You can import any test from a Use Case or other element into the **Testing** window. This avoids having to duplicate the test information manually.

Import a Test

To import a test, follow the steps below:

1. Open a diagram or the **Project Browser** and select the element into which to import the tests.
2. Open either:
 - The **Testing** window, or
 - The **Testing** folder of the **Element Browser** window (see *Using Enterprise Architect - UML Modeling Tool*).
3. Right-click on the list of tests to display the context menu, and select the **Import Tests from Other Element** menu option. The **Import Element Tests** dialog displays.



4. You can import tests from any element in the model by clicking on the **Select element** drop-down arrow and selecting the required element. Select the test to import from the **Select items to import** list.
5. Click on the **OK** button to import the selected test(s).

The **Import Element Tests** dialog has the following additional options:

Option	Use to
Show related elements only	Filter selection to apply only to related elements.
Limit Selection to these Object Types only	Type in specific element types, separated by commas, to filter for only those element types.
Refresh	Refresh available options.

3.11 Import Responsibility or Constraint as Test

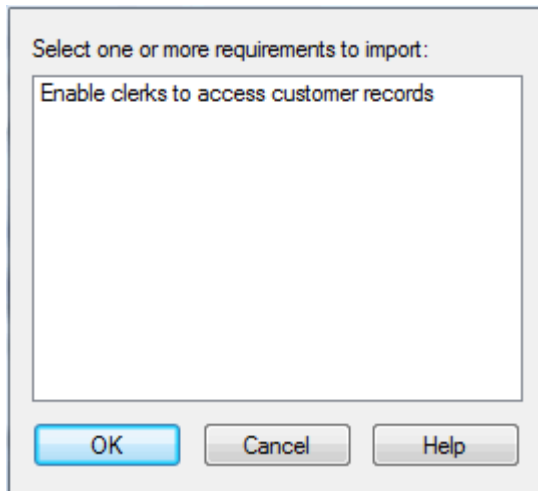
In the same way as you can import a scenario from an element as a test, you can also import an internal requirement (responsibility) or internal constraint as a test.

To import a requirement or constraint as a test, follow the steps below:

1. Open a diagram or the **Project Browser** and select the element into which to import the responsibility or constraint.
2. Open either:
 - The **Testing** window and the tab into which to import the test, or
 - The **Testing** folder of the **Element Browser** window (see *Using Enterprise Architect - UML Modeling Tool*).
3. Right-click on the list of tests to display the context menu (if in the **Element Browser**, click on a test of the appropriate type).
4. Click on the appropriate option, either:

- **Import element constraint(s)** or
- **Import element requirement(s)**.

The **Import Constraint** or **Import Requirements** dialog displays (the two dialogs are identical):



The dialog lists all of the internal requirements or constraints in the selected element.

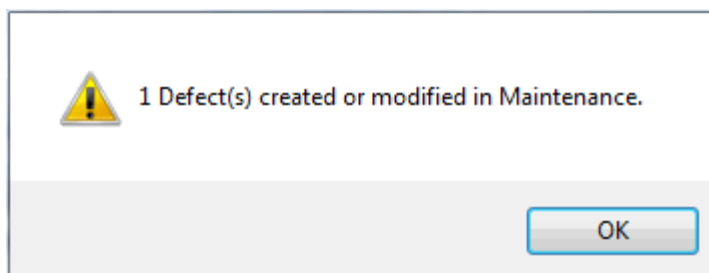
5. Select one or more of the items to import as tests, and click on the **OK** button. Each item is added to the list of tests in the **Testing** window, as a standard, 'Not Run' test.
6. Edit the items to complete their definition as tests.

3.12 Create Maintenance Item From Test

If an element fails a test, one likely consequence is that a Defect (Issue) item has to be raised in model maintenance to correct the problem. You can generate this Defect item directly from the test that failed.

To create a Maintenance item from a test, follow the steps below.

1. In the **Testing** window, or the *Testing* folder of the **Element Browser** window, right-click on the test item from which to generate the Maintenance item.
2. On the context menu, select the **Create a Maintenance Defect from this test** menu option. The following message box displays.



3. Click on the **OK** button to clear the message.
4. Open the **Maintenance** window and select the **Defects** tab. Notice that the window displays a defect item having the same name as the test, and the test Description, Input, Acceptance Criteria and Results texts are displayed in the defect **Description** tab.
5. [Update the defect item as required](#) ³⁶.

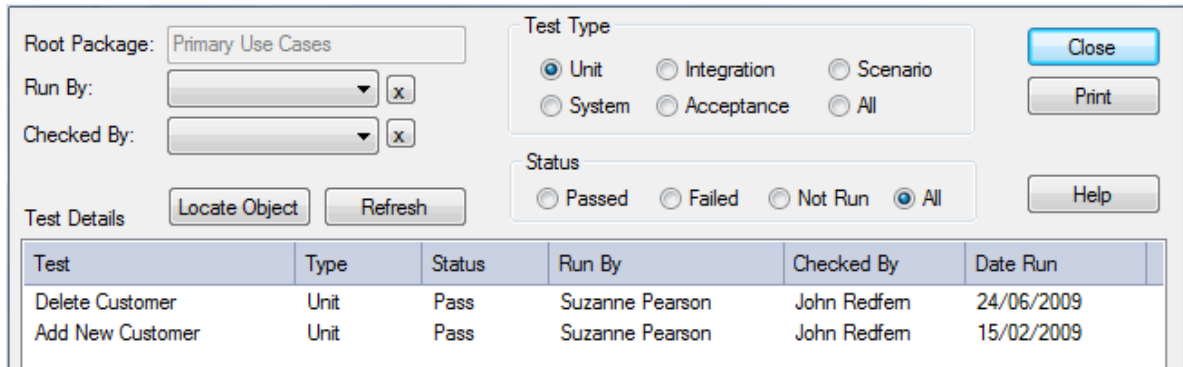
Note:

You can create Maintenance Defect items from several Test items at once. Press and hold **[Shift]** as you select the Test items, and then right-click and proceed as above. Each selected Test item then generates a Defect item.

3.13 Testing Details Report

You can view the **Testing Details** dialog for a package, which enables you to run filtered reports on all elements in the package hierarchy under your selection. You can also print the report details.

To access the **Testing Details** dialog, right-click on a package in the **Project Browser** to display the context menu, and select the **Documentation | Testing Details** menu option.



Test	Type	Status	Run By	Checked By	Date Run
Delete Customer	Unit	Pass	Suzanne Pearson	John Redfem	24/06/2009
Add New Customer	Unit	Pass	Suzanne Pearson	John Redfem	15/02/2009

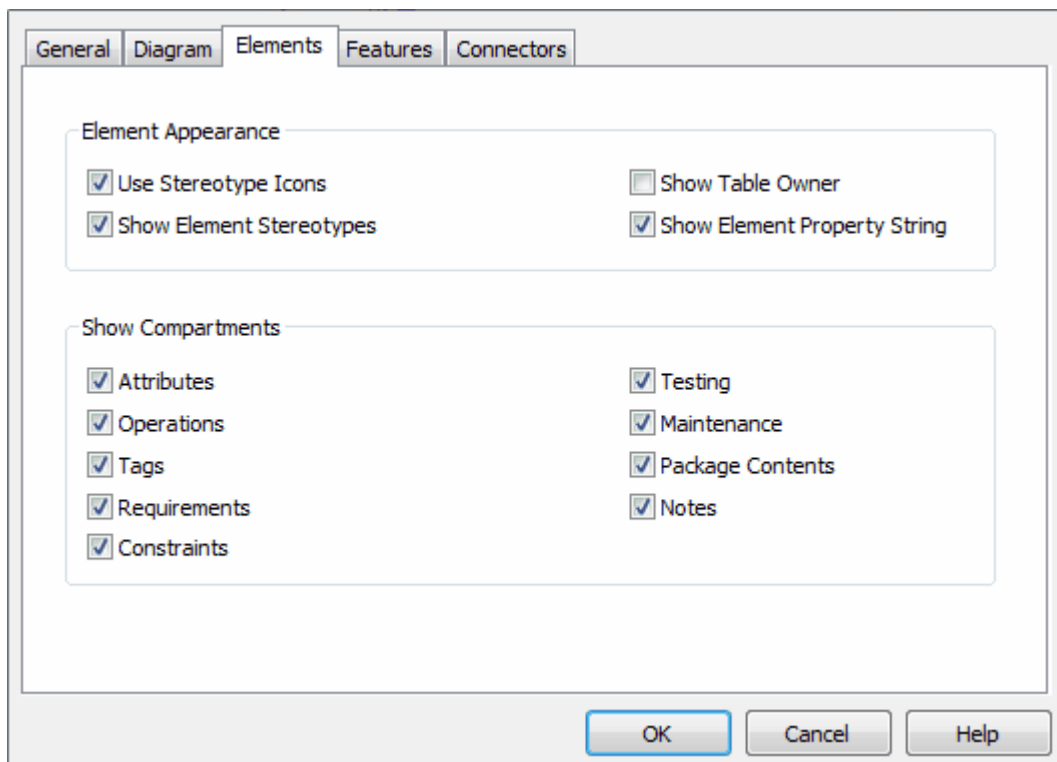
The **Testing Details** dialog includes the following options:

Options	Use to
Run By	Select a name to filter for tests run by that person. Click on the x button to clear the field.
Checked By	Select a name to filter for tests checked by that person. Click on the x button to clear the field.
Test Type	Select the radio button for the required test type.
Status	Select the radio button for the required status.
Locate Object	(After clicking on an element in the Test Details list) locate the element in the Project Browser .
Refresh	Re-run the report query.
Print	Print a summary of the test results.

3.14 Show Test Script Compartments

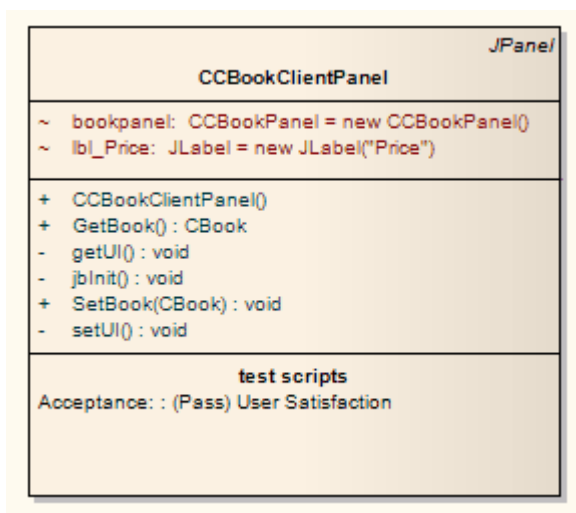
Any element that is capable of displaying a compartment can be used to show test scripts in a diagram. To make use of the feature the element must have an attached test. To use this feature follow the steps below:

1. Open a diagram containing the element with the attached test items.
2. Double-click on the diagram background to display the **Diagram Properties** dialog. Click on the **Elements** tab.



3. In the **Show Test Script Compartments** panel, select the **Testing** checkbox.
4. Click on the **OK** button to save the setting.

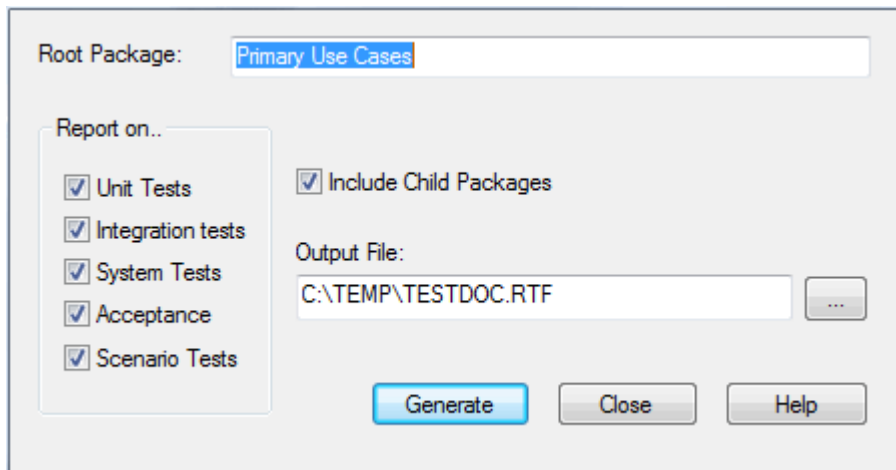
The tests now appear as an item in the test scripts compartment of the diagram element.



3.15 Test Documentation

Enterprise Architect enables you to output the test scripts and results you have entered against elements in the model, in Rich Text format. For more information on entering test scripts and details see the previous sections of the [Testing](#)^[19] topic.

To create the documentation, right-click on a package in the **Project Browser** and select the **Documentation | Testing Report** context menu option. The **Generate Test Documentation** dialog displays.

**Note:**

You can also access the **Generate Test Documentation** dialog by selecting the **Project | Documentation | Testing Report** menu option.

The **Generate Test Documentation** dialog enables you to set up your report. You can configure which tests to include or exclude in the report, whether to include child packages and what file to output to.

4 Maintenance



Maintenance Items

Maintenance items are defects, changes, issues and tasks. They all apply to individual model elements and can be used to record and capture problems, changes, issues and tasks as they arise, and document the solution and associated details. They are defined as follows:

- A **defect** can be considered as a failure to meet a requirement for the current model element
- A **change** can be considered as a change in requirement for the current model element
- An **issue** records a risk factor that might affect the project being recorded for the current model element
- A **task** is a means of recording work in progress and work outstanding for the current model element.

Note that each of these maintenance items applies at the model element level. For *changes*, *defects* and *issues* that apply to the whole system, see the [Changes and Defects](#)^[40] topic; for *tasks* that apply to the whole system, see the [Project Tasks](#)^[45] topic.

The following topics explain how to create and edit Maintenance items:


- [The Maintenance Workspace](#)^[35] - describes the **Maintenance** window
- [Maintenance Item Properties](#)^[36] - describes how to complete the **Maintenance** window tabs for the various maintenance items
- [Move or Copy Maintenance Items](#)^[38] - describes how to move items between maintenance categories or generate items from an item in a different category
- [Create Elements From Maintenance Items](#)^[38] - describes how to generate elements from maintenance items
- [Show Maintenance Script in Diagram](#)^[39] - describes how to display maintenance items in elements on diagrams
- *Insert Maintenance Feature* - describes how to add a maintenance item directly to an element via in-place editing. (See *UML Modeling With Enterprise Architect - UML Modeling Tool*)

4.1 The Maintenance Workspace

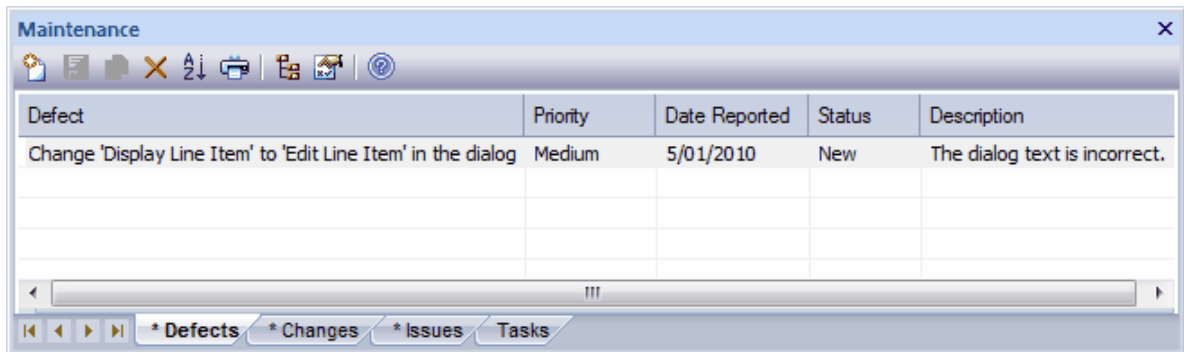
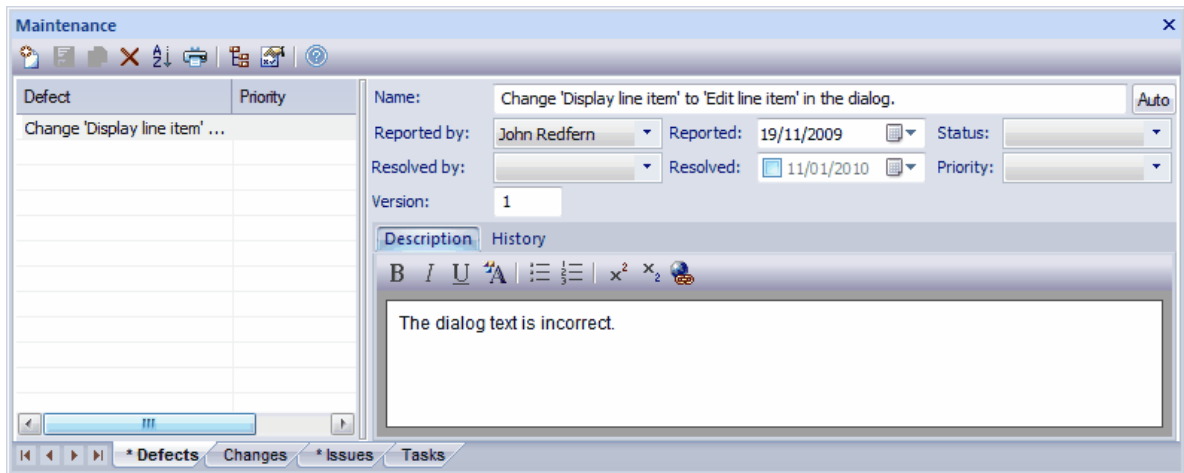
Enterprise Architect makes it easy to record and capture problems and issues as they arise, and document the solution and associated details. The **Maintenance** window provides a quick method of viewing and modifying the [changes, issues defects and 'to do' items](#)^[35] associated with a particular model element. You can include the maintenance items in the main RTF documentation and HTML produced by Enterprise Architect. The **RTF Setup** dialog has checkboxes to show or hide element maintenance items.

You access the **Maintenance** window by selecting the **View | Other Element Tools | Maintenance** menu option, or by pressing **[Alt]+[4]**. Click on the required tab - **Defects**, **Changes**, **Issues** or **Tasks** - and select model elements in diagrams or in the **Project Browser** to see the associated maintenance items.

You can also use the **Element Browser** window to select and display specific items on the **Maintenance**

window (see *Using Enterprise Architect - UML Modeling Tool*). Click on the  icon in the **Maintenance** window toolbar to display the **Element Browser**, open the **Maintenance** folder and select the required item. In the folder, the 'page' icon contains a **C** for Change items, **D** for Defect items, **T** for Task items, or **I** for Issue items.

The window has two formats, as illustrated below - *Item* mode and *List* mode respectively.



To toggle between the modes, click on the **Show/Hide Properties** button in the window toolbar. Item mode displays a single item with others of the same type listed in the left-hand panel. You can also either switch to List mode or select another item from the **Element Browser** window. List mode displays all items of one type in the selected element; it does not, however, display as much detail on an item as Item mode does.

Using the toolbar, you can **add or delete** ^[36] items and show or hide the **Properties** window to enable you to **edit** ^[36] each item in the list. Click on the **New** icon in the window toolbar to add new items. In Item mode, this clears the fields for new data. In List mode, this displays the **<item type> details for <element type> <element name>** dialog. By clicking on the **Auto** button in Item mode or on the **details** dialog, you can apply an automatic naming/numbering nomenclature that you have previously defined (see the *Element Tasks* section in *UML Modeling With Enterprise Architect - UML Modeling Tool*).

An asterisk on a tab (as for the **Defects** tab, above) indicates that the tab contains saved information. If the tab has no information or the information has not yet been saved, there is no asterisk, as shown for the **Tasks** tab.

You can also display the maintenance items in a **compartment** ^[39] of each appropriate element in a diagram.

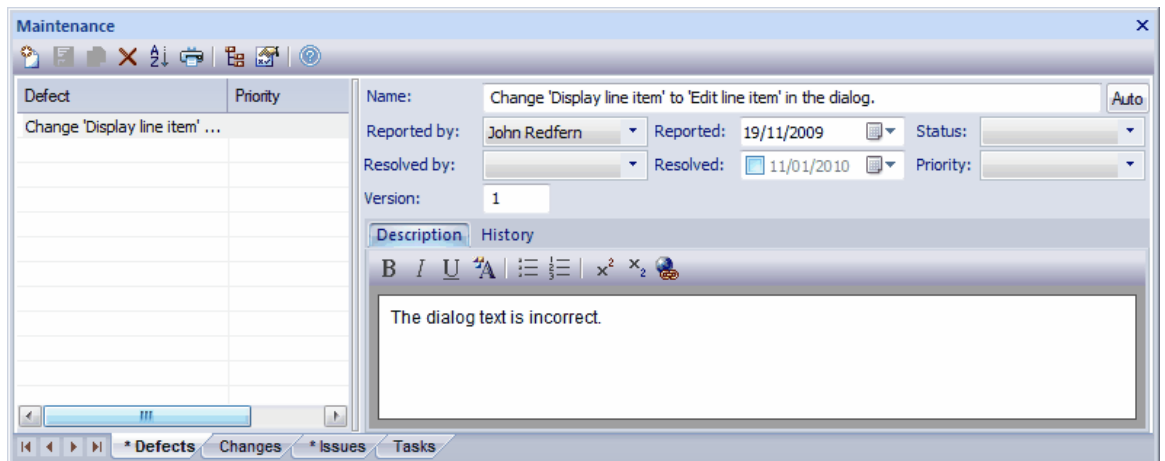
4.2 Maintenance Item Properties

Note:

For information on element-level Defects, Issues, Changes and Tasks, see the **Maintenance** ^[35] topic. For information on the **Maintenance** window, see the **Maintenance Workspace** ^[35] topic.

To create, edit or delete maintenance items, follow the steps below:

1. Select the **View | Other Element Tools | Maintenance** menu option. The **Maintenance** window displays.



2. Open a diagram or the **Project Browser** and select an element. In Item mode, the oldest maintenance item of each type for that element is shown in the **Maintenance** window, on the appropriate tab. The other items are listed either in the left hand panel or in List mode.
3. Click on the **Browse Element** icon in the window toolbar. The **Element Browser** window displays.
4. To:
 - Add a new item, select the appropriate tab, click on the **New** icon in the **Maintenance** window toolbar and complete the fields as described in the table below
 - Modify an existing item, select the item from the left-hand list panel or from the **Maintenance** folder of the **Element Browser** window and edit the fields as described in the table below
 - Delete an existing item, select the item from the left-hand list panel or the **Maintenance** folder of the **Element Browser** window and click on the **Delete** icon in the **Maintenance** window toolbar.
5. Click on the **Save** button in the window toolbar.

Complete or edit the following fields on the **Maintenance** window

Note:

This table describes the fields of the **Defects** tab of the **Maintenance** window. The **Changes**, **Issues** and **Tasks** tabs differ only in minor details.

Option	Use to
Name	Type the name or a short description of the defect.
Reported by	Select the name of the person who reported the defect.
Reported	Select the date on which the defect was reported.
Status	Select the defect status, such as New or Complete .
Resolved by	Select the name of the person who fixed the defect.
Resolved	Select the date on which the defect was resolved.
Priority	Select the priority assigned to resolving the defect.
Version	Type the version number associated with this fix.
Description	Type a longer description of the defect. You can format the text using the Rich Text Notes toolbar at the top of the field. (See the <i>Workspace Toolbars</i> topic in <i>Using Enterprise Architect - UML Modeling Tool</i> .) This text is also reflected in the Notes window, but cannot be edited there.
History	Enter any notes or references to previous occurrences of this defect. You can format the text using the Rich Text Notes toolbar at the top of the field. (See the <i>Workspace</i>

Option	Use to
	Toolbars topic in <i>Using Enterprise Architect - UML Modeling Tool.</i>) This text is also reflected in the Notes window, but cannot be edited there.

4.3 Move or Copy Maintenance Items

When you define an item on the **Defects**, **Changes**, **Issues** or **Tasks** tab of the **Maintenance** window, you might decide that the item either is better suited to another Maintenance category, or forms a good template for items in other categories. Enterprise Architect enables you to move or copy items between categories.

To move or copy a maintenance item, follow the steps below:

1. [Open the Maintenance window](#) ³⁵ and select the tab that contains the item you want to move or copy.
2. Right-click on the required maintenance item. The item context menu displays.
3. Click on the appropriate option - **Move to** or **Copy to**. A list of maintenance categories displays.
4. Click on the category to which to move or copy the item. A confirmatory prompt displays.
5. Click on the **Yes** button to confirm the move or copy.
6. Click on the target tab to ensure that the item has been added, and [make any required changes](#) ³⁶.

4.4 Create Elements From Maintenance Item

A maintenance item identifies a defect, change, issue or task concerning an element. The maintenance item could itself be represented by an element if it has wider implications for the project or identifies - for example - an actor, activity or action that requires further definition.

You can create one or more elements from any maintenance item, using the **Maintenance** window. The new element is connected to the maintenance item's parent element by a Dependency connector. The item itself remains unchanged as a characteristic of its parent element.

To create an element from a maintenance item, follow the steps below:

1. [Open the Maintenance window](#) ³⁵ and select the tab that contains the item you want to create the element from.
1. Right-click on the required maintenance item. The item context menu displays. select the **Create as new Element** context menu option. The **New Element** dialog displays.
2. In the **Name** field, type a name for the new element.
3. In the **Type** field, click on the drop-down arrow and select the required element type. For example, you might create an Issue element for a Defect or Issue maintenance item, a Change element for a Change item, or an Action for a Task item.

You can, however, create a wide range of other element types should any of these be appropriate, and use the **Select Group** button to select a profile, MDG Technology or Add-In to create an element specific to that element group.

4. If necessary, in the **Stereotype** field click on the drop-down arrow and select a stereotype to apply to the new element.
5. If you want to immediately define the properties of the element, select the **Open Properties Dialog on Creation** checkbox.
6. If you are adding multiple elements in one session, deselect the **Close dialog on OK** checkbox.
7. If you want to add the element to the currently-open diagram, select the **Add to Current Diagram** checkbox.
8. Click on the **OK** button to create the element.

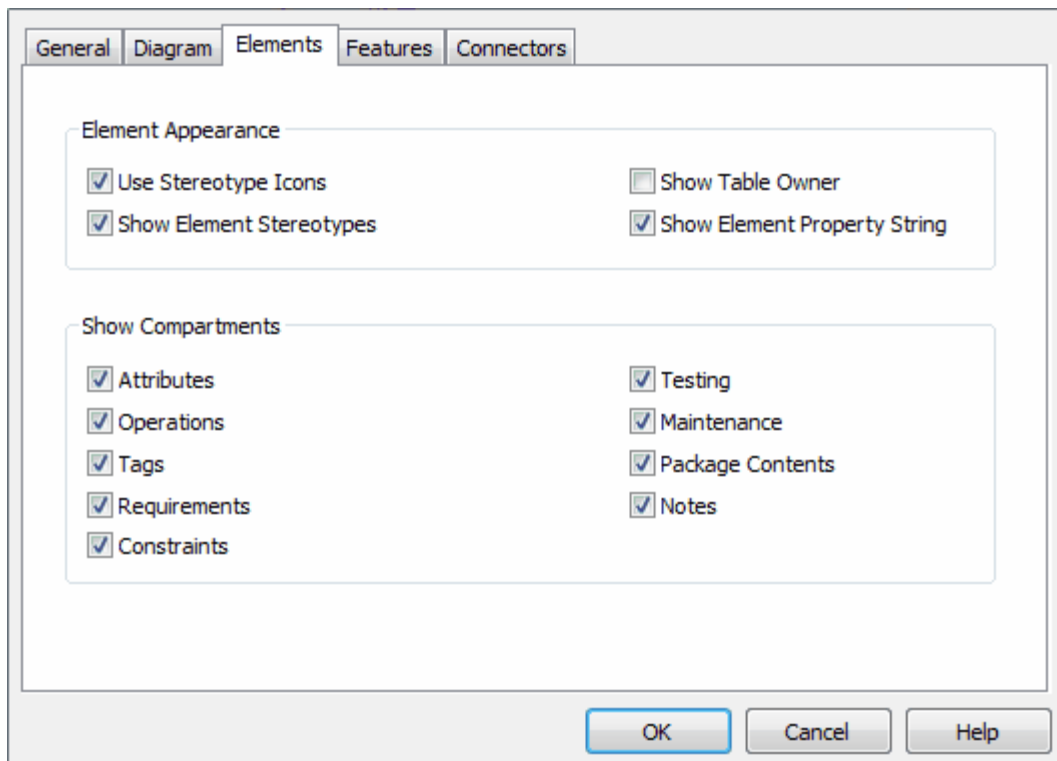
The element is added to the **Project Browser** and - if requested - to the current diagram.

4.5 Show Maintenance Script in Diagram

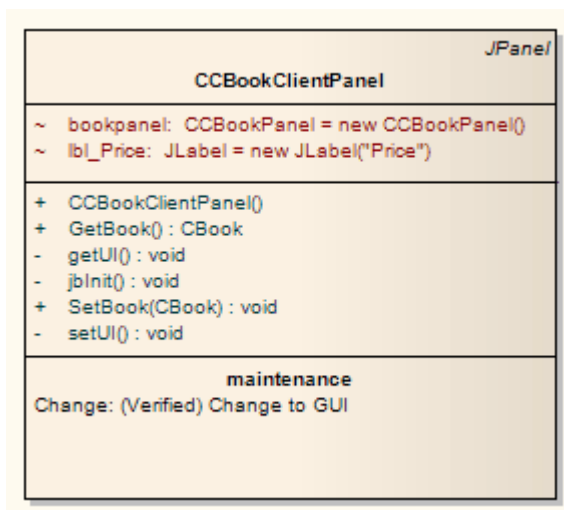
Any element that is capable of displaying a compartment can show [maintenance scripts](#) in a diagram. To make use of the feature the element must have an attached maintenance item.

To use this feature follow the steps below:

1. Open a diagram containing the element with the attached maintenance items.
2. Double-click on the diagram background to display the **Diagram Properties** dialog. Click on the **Elements** tab.



3. In the **Show Compartments** panel, select the **Maintenance** checkbox.
 4. Click on the **OK** button to save the setting.
- The maintenance items now appear as items in the maintenance scripts compartment of the diagram element.



5 Changes and Defects



Change and Defect Elements

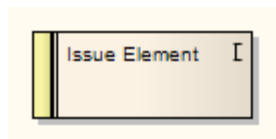
[Changes](#)^[41] and [Defects](#)^[40] are structured comments that can be used in managing change in a project. A *Defect* element (also known as an *Issue* element) corresponds to a failure to match the requirements for the current system. A *Change* element corresponds to a change in requirements for the current system.

Using Structured Comments

You can track changes and defects (issues) in an Enterprise Architect model. Change and Defect elements can be created in UML diagrams and connected using Realization, Dependency, Aggregation and other relationships to show what model element each affects and how each is resolved. You can edit the element [properties](#)^[42], and [assign people](#)^[43] (as *Actor* elements) to changes and defects.

5.1 Defects (Issues)

A *Defect* (or *Issue*) element is a structured comment that contains information about defects and issues that relate to the system or model. This corresponds in some sense to a failure to meet defined requirements for the current system. An Issue element looks the same as a Requirement element:



Enterprise Architect enables you to generate and handle issues in much the same way as you can handle and color code Requirements. See *Requirements Management* for more information.

You can link Issues using *Realization* connectors to model elements that are responsible for the defect. You can even structure a hierarchy of Issues using aggregation.

Note:

Issue elements can be created with or without an identifying **I** in the top right corner of the element. To toggle the display of this letter, select or deselect the **Show stereotype icon for requirements** checkbox on the **Options** dialog, **Objects** page (see the *Defaults and User Settings* topic in *Using Enterprise Architect - UML Modeling Tool*).

Add an Issue Using the Enterprise Architect UML Toolbox

To add an Issue to the model using the Enterprise Architect UML **Toolbox**:

1. Open a *Custom* diagram.
2. From the **Custom** pages or **Common** page of the Enterprise Architect UML **Toolbox**, drag the *Issue* icon onto the diagram.
3. Enter the details as required.

Add an Issue Using the Insert New Element Dialog

To add an Issue to the model using the **Insert New Element** dialog, follow the steps below:

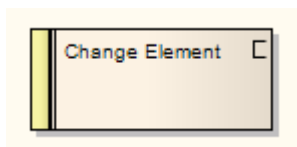
1. Right-click on a package in the **Project Browser**.

2. Select the **Insert | New Element** context menu option. The **New Element** dialog displays.

3. In the **Type** field, click on the drop-down arrow and select **Issue**.
4. In the **Name** field, type a name for the element.
5. Click on the **OK** button.

5.2 Changes

A *Change* element is a structured comment that contains information about requested changes to the system/model. This corresponds in some sense to a change in requirements for the current system. A Change element looks the same as a Requirement element:



Enterprise Architect enables you to generate and handle Changes in much the same way as you can handle and color code Requirements. See *Requirements Management* for more information.

You can connect *Changes* using *Realization* connectors to model elements that implement the Change, and you can structure a hierarchy of changes using Aggregation.

Note:

Change elements can be created with or without an identifying **C** in the top right corner of the element. To toggle the display of this letter, select or deselect the **Show stereotype icon for requirements** checkbox on the **Options** dialog, **Objects** page (see the *Defaults and User Settings* topic in *Using Enterprise Architect - UML Modeling Tool*).

Add a Change Using the Enterprise Architect UML Toolbox

To add a Change to the model using the Enterprise Architect UML **Toolbox**:

1. Open a *Custom* diagram.
2. From the **Custom** pages or **Common** page of the Enterprise Architect UML **Toolbox**, drag the *Change* icon onto the diagram.
3. Enter the details as required.

Add a Change Using the Insert New Element Dialog

To add a Change to the model using the **Insert New Element** dialog, follow the steps below:

1. Right-click on a package in the **Project Browser**.
2. Select the **Insert | New Element** context menu option. The **New Element** dialog displays.

The screenshot shows a dialog box for creating a new element. It contains the following fields and controls:

- Name:** A text input field with a cursor, and an **Auto** button to its right.
- Type:** A dropdown menu currently showing **Action**, with a **Select Group** button to its right.
- Stereotype:** An empty dropdown menu.
- Three checkboxes:
 - Open Properties Dialog on Creation
 - Close dialog on OK
 - Add to Current Diagram
- Three buttons at the bottom: **Create** (highlighted in blue), **Cancel**, and **Help**.

3. In the **Type** field, click on the drop-down arrow and select **Change**.
4. In the **Name** field, type a name for the element.
5. Click on the **OK** button.

5.3 Element Properties

The **Properties** dialog for Changes and Issues is similar to that used by Requirements. It has a **Properties** tab containing the name of the Issue and relevant management details (such as owner and dates). You can also associate files with the issue and add Tagged Values. See *UML Modeling with Enterprise Architect – UML Modeling Tool*.

The screenshot shows a dialog box titled 'Element Properties' with three tabs: 'Properties', 'Files', and 'Tagged Values'. The 'Properties' tab is selected. The form contains the following fields and values:

Short Description:	Incomptability		
Alias:			
Status:	Proposed	Type:	Functional
Difficulty:	Medium	Phase:	1.0
Priority:	Medium	Version:	1.0
Author:	Frederick Walter	Last Update:	19/11/2009
Key Words:		Created:	19/11/2009

Below the form is a 'Notes' section with a rich text editor toolbar containing icons for Bold (B), Italic (I), Underline (U), Text Color (A), Bulleted List, Numbered List, Indent, Decrease Indent, Text Color, and Background Color. The main text area is empty.

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'. The 'OK' button is highlighted with a blue border.

5.4 Assign People to Defects or Changes

As an example of how you might use the **Relationship Matrix** to monitor issues or changes, the screen below illustrates staff (actors) being linked through *Realization* connectors to *Issues*. Each highlighted square indicates a responsibility of a staff member to work on or correct a named issue. This same approach can be used for any mix of model elements.

Source: Resources		Type: <All>	Link Type: Realisation
Target: UC01-1: User Management		Type: <All>	Direction: Source -> Target
	UC01-1: User Management::Collaborations		
	UC01-1: User Management::Customer		
	UC01-1: User Management::Data Entry		
	UC01-1: User Management::Incompatability		
	UC01-1: User Management::Incompatability		
	UC01-1: User Management::Login Screen		
	UC01-1: User Management::Registration		
	UC01-1: User Management::Security		
	UC01-1: User Management::UpdateVersions		↑
	UC01-1: User Management::Workbench		
Resources::Andrew Sutton			
Resources::Claire Owens	↑	↑	

6 Project Tasks List



The *Project Tasks List* is a convenient 'To Do' list of major project work items that are not recorded elsewhere. It can also be used to track things like requests or meetings.

The Project Tasks List is available as a tab on the **System** window. To open the **System** window, select the **View | Other Project Tools | System** menu option, or press **[Alt]+[2]**. Select the **Project Tasks** tab.

Priority	Task	Type	Status	Owner	Description
1: High	View user locks failed	Defect	New	Suzanne Pearson	
2: Medi...	View user locks failed	Defect	New	Suzanne Pearson	

System window tabs: Project Tasks, Project Issues, Project Glossary

Right-click on the list to view the context menu, and select to add, modify or delete list items, or to set a status filter. To set the sort order, click the title-bar of the column on which to index the tasks.

For more information see the [Add, Modify and Delete Tasks](#)^[45] topic.

Tip:

Select the **Print List** menu option to print out the currently displayed items.

Note:

You can transport these task definitions between models, using the **Export Reference Data** and **Import Reference Data** options on the **Tools** menu. See the *Reference Data* topic in *UML Model Management*.

6.1 Add, Modify and Delete Tasks

From the **Project Tasks** tab on the **System** window, display the **Task Detail** dialog to [Add](#)^[45], [Modify](#)^[47] and [Delete](#)^[47] tasks.

Add a Task

To add a task, follow the steps below:

1. Double-click in a blank area of the **Project Tasks** tab, or right-click and select the **Add New** context menu option. The **Task Detail** dialog displays.

Details

Task: 'View user locks' failed Auto

Type: Defect Owner: Suzanne Pearson Start: 25/02/2009

Status: New Assigned: John Redfern End: 25/02/2009

Priority: High Total Time: Actual Time: Percent: 0

Phase: Actual Time:

Description

History

New Apply **OK** Cancel Help

2. Enter the details for the task. You can define the following:
 - The task name
 - Auto counters - if you have configured these, click on the **Auto** button (see the *Use Auto-naming and Auto Counters* topic in *UML Modeling with Enterprise Architect – UML Modeling Tool*)
 - The task type
 - The task owner
 - The expected start and end date for the task
 - The current status of the task
 - The person this task has been assigned to
 - The task priority: high, medium or low
 - The expected total time for the task and the actual time expended
 - The percent complete
 - The phase associated with this task.
3. Click on the **Apply** button.
4. To create another entry, click on the **New** button, or to close, click on the **OK** button.

Modify a Task

To modify a task, on the **Project Tasks** tab, either:

- Double-click on the task to modify, or
- Right-click on the task to modify and, from the context menu, select the **Modify Selected** menu option.

The **Task Detail** dialog displays, and you can edit the task data.

Delete a Task

To delete a task, follow the steps below:

1. On the **Project Tasks** tab, right-click on the task to delete. The context menu displays.
2. Select the **Delete** menu option.

7 Project and Model Issues



Any identified issues can be recorded against the current project. Issues are raised with a description, date, owner and status.

Note:

You can transport these issue definitions between models, using the **Export Reference Data** and **Import Reference Data** options on the **Tools** menu. See the *Reference Data* topic in *UML Model Management*.

You can [add, delete and modify](#)^[51] Issues using either the [Project Issues](#)^[48] dialog, or the [Issue Detail](#)^[50] dialog from the **Project Issues** tab of the **System** window. You can also generate and view an RTF report of your issue list, using either the [Project Issues](#)^[51] dialog or the [Project Issues](#)^[52] tab.

Tip:

You can view sample report output in the [Report Output Sample](#)^[52] topic.

7.1 Project Issues Dialog

The **Project Issues** dialog is accessed from the **Project | Documentation | Issues** menu option. This dialog enables you to record a description, date, owner and status of any identified issues against the current project. You can [add, modify and delete issues](#)^[51], and [generate a report](#)^[51] of your project issues in Rich Text Format.

Details

Issue: Auto

Priority: Low Date: 19/11/2009

Status: Open Owner:

Desc:

Resolution

Resolver: Date: 19/11/2009 Close Issue

Comments:

New Save Delete

Project Issues & Discussion

Issue	Date	Owner	Status
Public Holidays	24/06/2009	Shirley Anne	Under Review
Missing training material	24/06/2009	John Redfem	Open
Pre-production Environment Model...	24/06/2009	Frederick Walter	Open
The test servers will be delayed	24/06/2009	Suzanne Pearson	Under Review

Show Closed Issues
View RTF
Report
Close
Help

7.2 Project Issues Tab

The **Project Issues** tab in the **System** window enables any identified issues to be recorded against the current project. Issues are raised with a description, date, owner and status.

Note:

In the Corporate, Business and Software Engineering, System Engineering and Ultimate editions of Enterprise Architect, if security is enabled you must have **Manage Issues** permission to update and delete Issues records. See *User Security in UML Models*.

To access this tab, select the **View | Other Project Tools | System** menu option or press **[Alt]+[2]** to display the **System** window, and click on the **Project Issues** tab.

Tip:

You can right-click on the list and select the **Print List** context menu option to print out the currently displayed items.

Priority	Issue	Date	Status	Owner	Description
1: High	Pre-production Envir...	24/06/2009	Open	Frederick Walter	
3: Low	Public Holidays	24/06/2009	Under Review	Shirley Anne	
3: Low	Missing training mat...	24/06/2009	Open	John Redfern	
3: Low	The test servers will b...	24/06/2009	Under Review	Suzanne Pears...	

To [add](#) ⁵¹ a new issue, double-click on an empty row of the **Project Issues** tab. To [modify](#) ⁵¹ an issue, double-click on the required item in the list. In each case, the **Issue Detail** dialog displays.

Details

Issue: Auto

Priority: Date:

Status: Owner:

Description:

Resolution:

Date: Resolved By:

Comments:

New Apply OK Cancel Help

You can also [delete](#) ⁵¹ an issue and [generate a report](#) ⁵² of your issues in Rich Text Format.

7.3 Add, Delete and Modify Issues

Issues can be added, deleted and modified using either the [Project Issues](#) ^[48] dialog, or the [Issue Detail](#) ^[50] dialog from the **Project Issues** tab of the **System** window.

To *add* an issue, click on the **New** button and complete the following fields:

Component	Description
Issue	The name of the issue.
Auto	Click on the Auto button if you have auto counters configured. (See the <i>Use Auto-naming and Auto Counters</i> topic in <i>UML Modeling with Enterprise Architect – UML Modeling Tool</i> .)
Priority	The priority of this issue: low, medium or high.
Date	The date the issue arose.
Status	The issue's current status.
Owner	The person owning the issue.
Description	Description of the issue.
Resolution	Notes on the resolution of the issue.
Date	The date the issue was resolved.
Resolved By	Person who resolved the issue.
Comments	Any comments regarding the resolution of the issue.
Close Issue	Click on this button to close the issue.
Apply	Save and apply the issue.

To *modify* an issue, double-click on it in the **Project Issues** tab or **Project Issues & Discussion** list, then edit the fields as indicated in the above table.

To *delete* an issue, click on it in the **Project Issues** tab or **Project Issues & Discussion** list, then:

- Click on the **Delete** button (**Project Issues** dialog) or
- Right-click on the issue and select the **Delete** option from the context menu.

7.4 Report From Project Issues Dialog

To generate an RTF document of your issue log using the **Project Issues** dialog, follow the steps below:

1. Select the **Project | Documentation | Issues** menu option. The **Project issues** dialog displays.
2. Click on the **Report** button. The **Save As** dialog displays.
3. Browse for the appropriate file location and, in the **File name** field, type the file name for the report.
4. Click on the **Save** button.
5. To view the report, click on the **View RTF** button.

Tip:

For information on viewing sample report output, see the [Report Output Sample](#) ^[52] topic.

7.5 Report From Project Issues Tab

To generate an RTF document of your issue log using the **Project Issues** tab of the **System** window, follow the steps below:

1. Select the **View | Other Project Tools | System** menu option, or press **[Alt]+[2]**. The **System** window displays.
2. Click on the **Project Issues** tab.
3. Right-click on a blank line of the **Project Issues** tab and select the **Create RTF Report** context menu option. The **Save As** dialog displays.
4. Enter the directory location and file name to save your report to and click on the **Save** button. Enterprise Architect generates the report. This should only take a few moments to complete.

Tip:

For information on viewing sample report output, see the [Report Output Sample](#) ⁵² topic.

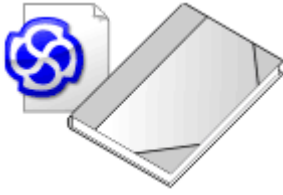
7.6 Report Output Sample

An example of the output from an Issues report is shown below:

List of Project Issues: 24-Jul-2007 9:47:00 AM

Issue	Date/Owner	Description	Resolution
Test servers will be delayed	24/07/2007 Eloise Norman	The test server builds have been delayed because the particular (unusual) memory requirements to match the customer's site are not available on shore. They are being sourced from Singapore but it will delay the builds and delivery of the machines.	Closed: 24/07/2007 Geoffrey Sparks The machines will be built and delivered using standard memory and the proprietary memory will be added later. All performance tests will be delayed until the memory is available.
Public Holidays	24/07/2007 Joanna Stoa	The schedule includes staff working on public holidays. A number of staff have indicated that contrary to what they stated earlier they are not available.	Open: 24/07/2007
Compiler Version disparity	24/07/2007 Eloise Norman	A number of the developers have downloaded different versions of a number of the compilers. This has lead to unpredictable builds impacting on testing.	Under Review: 24/07/2007

8 Project Glossary



The glossary enables you to set up a list of defined terms for your project. You can further divide the items by category; for example, Business terms and Technical terms. The glossary can be saved in Rich Text format for inclusion as part of a larger project document.

You can add, delete and modify the project glossary entries through the [Glossary](#) dialog or through the [Project Glossary](#) tab on the **System** window. You can also create glossary terms and definitions from text in the **Notes** window or from any **Notes** or **Description** fields that have the **Rich Text Notes** toolbar. Once these terms exist, you can insert them into any of those same fields by pressing **[Ctrl]+[Space]** and selecting them from an autocompletion box (see *Using Enterprise Architect - UML Modeling Tool*).

Tip:

Include a [Glossary Report](#) in your project requirements or functional specifications documents.

Note:

You can transport these glossary definitions between models, using the **Export Reference Data** and **Import Reference Data** options on the **Tools** menu. See the *Reference Data* topic in *UML Model Management*.

8.1 The Glossary Dialog

To open the **Glossary** dialog, select the **Project | Documentation | Glossary** menu option. Use this dialog to [add](#) glossary entries, [modify](#) glossary entries and [delete](#) glossary entries. You can also [limit the display](#) to list entries of a specific type for editing or deletion.

Glossary Term: Glossary Type: Technical

Description:

B *I* U ⁴A | $\frac{1}{3}$ $\frac{1}{3}$ | x^2 x_2

The component model provides a detailed view of the various hardware and software components that make up the proposed system. It shows both where these components reside and how they inter-relate with other components. Component requirements detail what responsibilities a component has in order to supply functionality or behavior within the system.

Limit Display to: <All>

Type	Term
Technical	Class
Technical	Component Model
Business	Customer
Technical	Deployment Architecture
Technical	Deployment Model
Technical	Extends Relationship
Technical	Includes Relationship
Technical	Use Case

Option	Use to
Glossary Term	Type the term to include in the glossary.
Glossary Type	Select either Technical or Business . If you require a different glossary type, click on the [...] (browse) button and specify the name of the new type. This field applies the type only to the selected term. You can rename a type for all terms of that type ^[55] , using the Project Glossary tab of the System window.
Description	Type the definition or description of the term. You can format the text of this description using the Rich Text Notes toolbar at the top of the field (see <i>Using Enterprise Architect - UML Modeling Tool</i>).
Limit Display To	Select the appropriate type to filter the Type Term list to show entries of a specific type for editing or deletion.
Type Term	Review the list of defined glossary terms.
Report	Print a glossary report ^[57] .

Add a Glossary Entry

To add an entry to the glossary, follow the steps below:

1. Enter the details for the glossary item: the **Glossary Term**, the **Glossary Type** and the **Description**.

Note:

A glossary term must have a defined type and description. You cannot save a new term without both of these values.

2. Click on the **Save** button.
3. To enter another item, click on the **New** button.

Modify a Glossary Entry

To modify a glossary entry, follow the steps below:

1. Select the entry to modify from the bottom panel of the dialog. The details of the entry display in the fields in the top half of the window.

Note:

A glossary term must have a defined type and description. You cannot save an edited term without both of these values.

2. Change the details as required.
3. Click on the **Save** button.

Delete a Glossary Entry

To delete a glossary entry, follow the steps below:

1. Select the entry to delete from the bottom panel of the dialog. The details of the entry display in the fields in the top half of the window.
2. Click on the **Delete** button.

Limit the Display

You can select which entry categories are displayed in the list. To:

- View all glossary entries, select the **All** value in the **Limit Display To** field.
- View entries of a specific type only, select the appropriate value in the **Limit Display To** field.

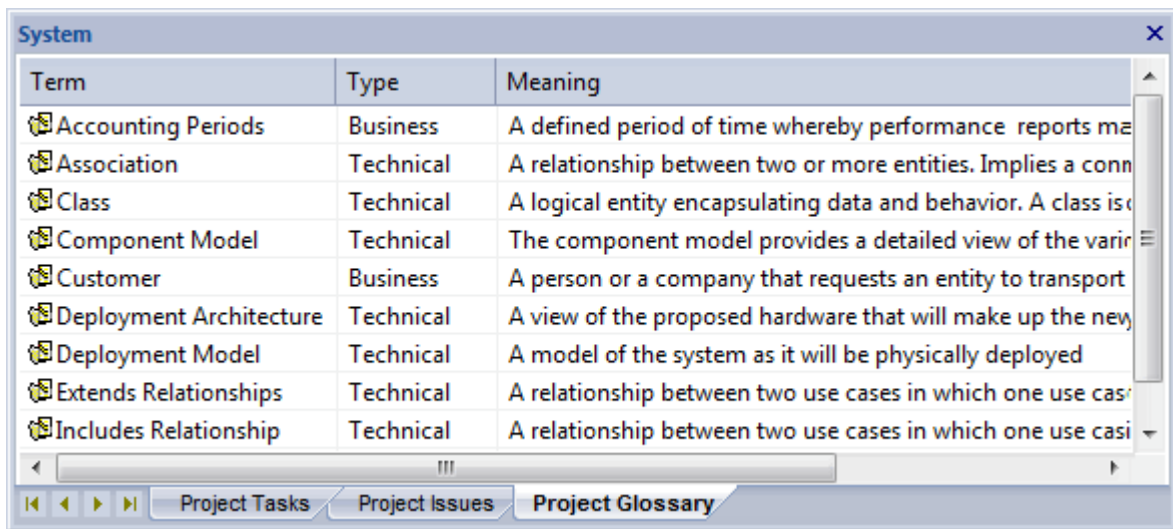
8.2 Project Glossary Tab

The **Project Glossary** tab in the **System** window shows all of the items in your model's glossary. This tab lists all the glossary terms already defined for a model. You can add to the list, delete or change items, change a definition type for all terms of that type, and filter the list to exclude by type.

Access this tab by opening the **System** window; select the **View | Other Project Tools | System** menu option or press **[Alt]+[2]**. Select the **Project Glossary** tab.

Tip:

To print out all of the currently listed items, right-click on the list and select the **Print List** context menu option.



Term	Type	Meaning
Accounting Periods	Business	A defined period of time whereby performance reports ma
Association	Technical	A relationship between two or more entities. Implies a conn
Class	Technical	A logical entity encapsulating data and behavior. A class is c
Component Model	Technical	The component model provides a detailed view of the vari
Customer	Business	A person or a company that requests an entity to transport
Deployment Architecture	Technical	A view of the proposed hardware that will make up the new
Deployment Model	Technical	A model of the system as it will be physically deployed
Extends Relationships	Technical	A relationship between two use cases in which one use cas
Includes Relationship	Technical	A relationship between two use cases in which one use cas

Right-click on an entry and use the context menu to [add](#)^[56], [modify](#)^[57], [reclassify](#)^[57], [filter](#)^[57] and [delete](#)^[57] glossary entries (as below). Alternatively, select the **Project | Documentation | Glossary** menu option and use the [Glossary](#)^[53] dialog.

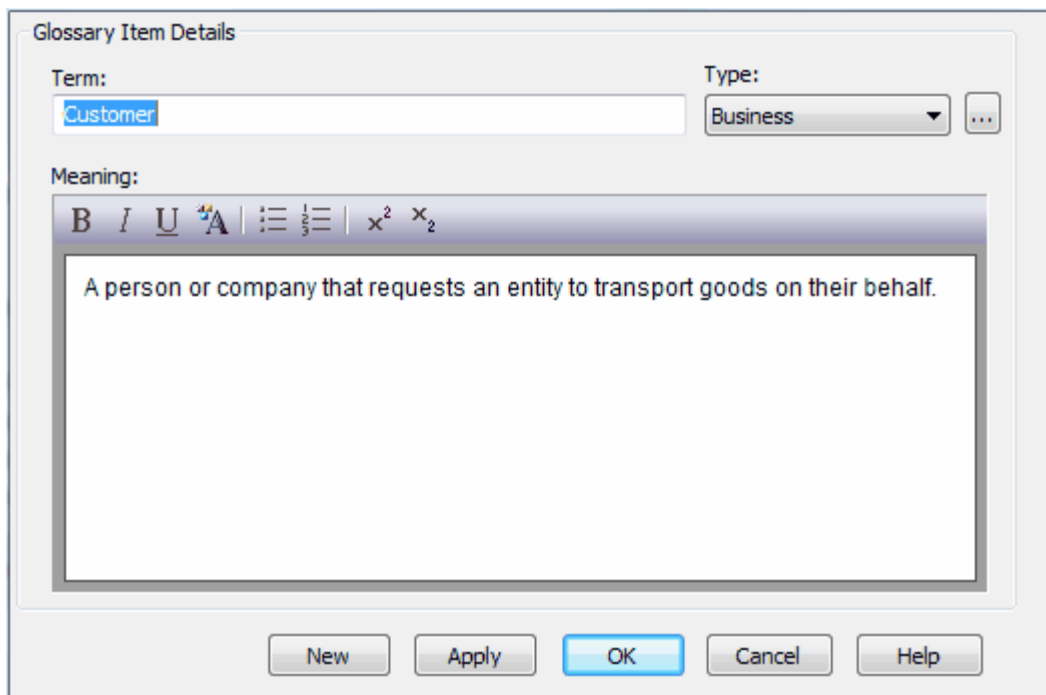
Tip:

Include a [Glossary Report](#)^[57] in your project requirements or functional specifications documents.

Add a Glossary Entry

To add an entry to the glossary, follow the steps below:

1. Double-click on the **Project Glossary** tab, or right-click on the tab and select the **Add New** context menu option. The **Glossary Detail** dialog displays.



Glossary Item Details

Term: Type: ...

Meaning:

B I U A | **☰ ☷** | **x² x₂**

A person or company that requests an entity to transport goods on their behalf.

2. Enter the details for the glossary item: the **Term**, **Type** and **Meaning**. You can, if necessary, format the **Meaning** text using the **Rich Text Notes** toolbar at the top of the field.

If the **Type** values are not appropriate for the term, click on the [...] button and enter another type name.

Note:

A glossary term must have a defined type and description. You cannot apply a new term without both of these values.

3. Click on the **Apply** button.
4. To create another entry, click on the **New** button.
5. To close, click on the **OK** button.

Modify a Glossary Entry

To modify a glossary entry, either:

1. Double-click on the entry to modify in the list on the **Project Glossary** tab, or
2. Right-click on the entry to modify in the list on the **Project Glossary** tab and select the **Modify Selected** context menu option.

The **Glossary Detail** dialog displays; edit the fields as required.

Delete a Glossary Entry

To delete a glossary entry, follow the steps below:

1. Right-click on the entry to modify in the list on the **Project Glossary** tab. The context menu displays.
2. Select the **Delete** menu option.

Redefine Type

If a glossary term type is no longer appropriate for all terms of that type, you can redefine the type for all terms at once. To do this, follow the steps below:

1. On the **Project Glossary** tab, right-click on a term of the type to be changed and select the **Rename Type** context menu option. The **Rename Glossary Type** dialog displays.
2. In the **New Type Name** field type a different type name, either an existing type or a new type.
3. Click on the **OK** button. On the **Project Glossary** tab, all entries of the original type are now redefined as being of the new type.

Note:

To reclassify [a single term](#), use the **Glossary Type** field on the **Glossary** dialog.

Filter List

To filter the **Project Glossary** tab display so that only terms of a specific type are listed, follow the steps below:

1. Right-click on the list and select the **Set term filter** context menu option. The **Term Type Filter** dialog displays.
2. In the **Term** field, click on the drop-down arrow and select the term type for which to list Glossary terms.
3. Click on the **OK** button. The list of Glossary terms is filtered to the selected type.

To remove the filter, either:

- Follow the steps above and select the value **<All>** in the **Term** field, or
- Right-click on the list and select the **Remove term filter** context menu option.

8.3 Generate a Report

To generate a report of your model's glossary, follow the steps below:

1. Select the **Project | Documentation | Glossary** menu option. The **Glossary** dialog displays.
2. Click on the **Report** button. The **Glossary Report** dialog displays.

The screenshot shows a dialog box for generating a glossary report. It includes a 'Filename' field with a browse button, a 'Heading' field with the text 'Glossary', and an 'Include Glossary Items' section with a list of 'Glossary Types' containing 'Technical' and 'Business' with checkboxes, and 'Select All' and 'Deselect All' buttons. A 'Document options' section contains 'Page Setup', 'Language', and 'Page break between sections' checkboxes. At the bottom are 'Generate', 'View', and 'Close' buttons.

3. In the **Filename** field, type or select a filename for the glossary.
4. In the **Heading** field, type a suitable heading for the glossary.
5. In the **Include Glossary Items** panel, select the checkbox for each type of glossary entry to include. Click on the **Select All** button to select all types of entry.
6. If necessary, click on the **Page Setup** and/or **Language** buttons to define the page setup and language for the report.
7. To include page breaks, select the **Page break between sections** checkbox.
8. Click on the **Generate** button to generate the report.
9. Click on the **View** button to open the report.

Note:

You can view sample report output in the [Glossary Report Output Sample](#)⁵⁸ topic.

8.4 Glossary Report Output Sample

An example of the output from a Glossary report is shown below:

Glossary

Business Terms

Accounting Periods

A defined period of time whereby performance reports can be extracted. (normally 4 week periods).

Customer

A person or a company that requests An entity to transport goods on their behalf.

Technical Terms

Association

A relationship between two or more entities. Implies a connection of some type - for

example one entity uses the services of another, or one entity is connected to another over a network link.

Component Model

The component model provides a detailed view of the various hardware and software components that make up the proposed system. It shows both where these components reside and how they inter-relate with other components. Component requirements detail what responsibilities a component has to supply functionality or behavior within the system.

Deployment Model

A model of the system as it is physically deployed.

Extends Relationship

A relationship between two Use Cases in which one Use Case 'extends' the behavior of another. Typically this represents optional behavior in a Use Case scenario - for example a user might optionally request a list or report at some point in a performing a business Use Case.

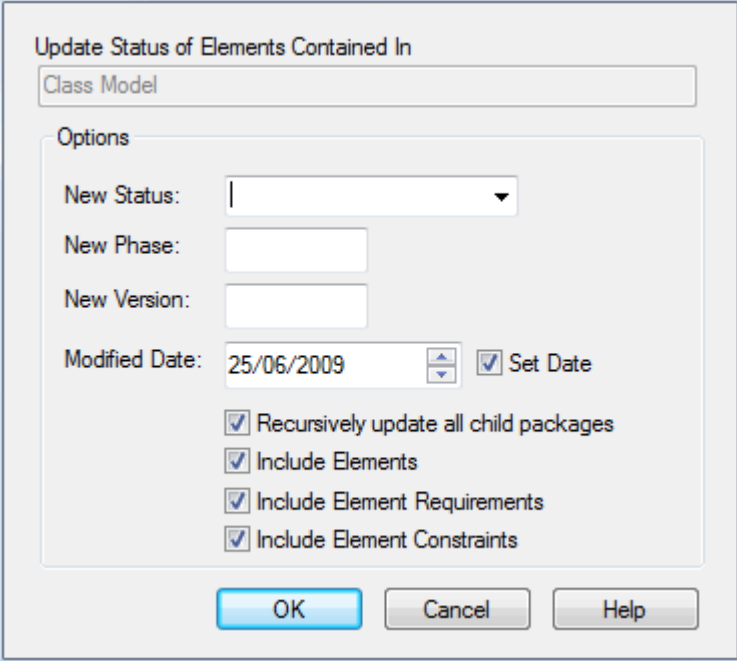
9 Update Package Status

Elements in Enterprise Architect can be assigned a current status, such as *Proposed*, *Validated* or *Mandatory*. Often a complete package structure is updated from one status to another (or released) at the same time. To help facilitate this, Enterprise Architect supports a 'bulk' update of element status at the same time.

Update Element Status for a Complete Package Structure

To update element status for a complete package structure, follow the steps below:

1. In the **Project Browser**, right-click on the package to update. The context menu displays.
2. Select the **Package Control | Update Package Status** menu option. The **Status Update** dialog displays.



Update Status of Elements Contained In

Class Model

Options

New Status: []

New Phase: []

New Version: []

Modified Date: 25/06/2009 [] Set Date

Recursively update all child packages

Include Elements

Include Element Requirements

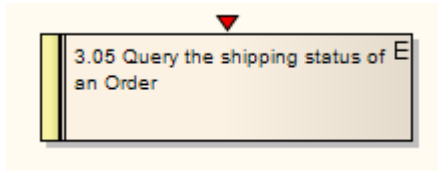
Include Element Constraints

OK Cancel Help

3. Select:
 - The new status
 - Whether to recursively descend the package tree
 - Whether to include elements
 - Whether to include element requirements
 - Whether to include element constraints
4. Click on the **OK** button. Enterprise Architect updates all required elements to the new status.

10 Manage Bookmarks

Bookmarks are small red triangles that display above elements in diagrams when the element has been 'bookmarked'. A bookmark is a visual clue that something is different about an element; the meaning is up to you.



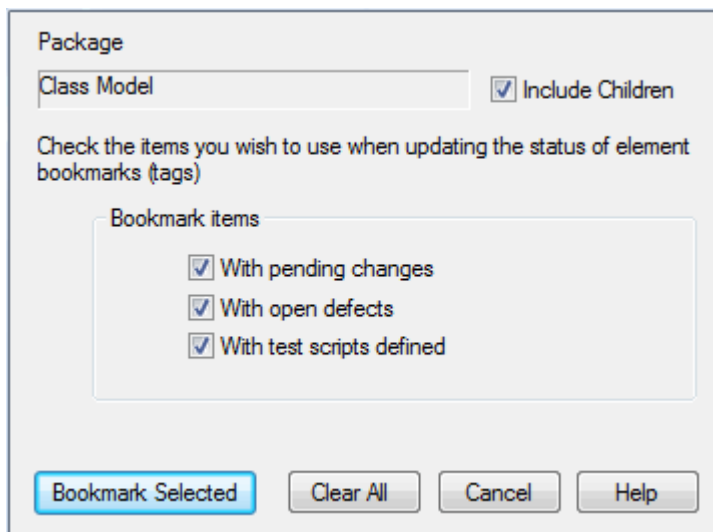
Tip:

The [Model Search window](#) also enables searching based on bookmarked elements. See the [Model Search](#) topic in *Using Enterprise Architect - UML Modeling Tool*.

You can bookmark a selected element in a diagram manually by pressing **[Shift]+[Spacebar]**. You clear the bookmark by pressing **[Shift]+[Spacebar]** again.

Bookmark Multiple Elements

You can also bookmark all elements in a folder (and their children) using the [Manage Bookmarks](#) dialog. Right-click on the parent package in the [Project Browser](#) and select the **Bookmarks** context menu option.



This dialog enables you to automatically bookmark elements that have new changes or defects defined in the [Maintenance](#) ^[35] window, or test scripts defined in the [Testing](#) ^[20] window. This is useful to highlight elements that have additional project information.

You can click on the **Clear All** button to clear all elements in the current tree of bookmarks. You should reload the project to show the new or cleared bookmarks (**[Ctrl]+[Shift]+[F11]**) - see *Version Control Within UML Models Using Enterprise Architect*.

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Architect

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