When modeling using requirement elements there are numerous UML connector types that can be used, however there are two types of relationship that are commonly used with requirement management. One for setting relationships between peer requirements (Aggregation), and another for representing how they will be implemented (for example a Realization by a Use Case).

Creating and Viewing Relationships In Enterprise Architect

there are three key methods used for tracking requirements and forming relationships between the requirements and their related elements. These relationships define how those requirements are to be implemented within the system. The three key methods are as follows:

- **Creating and viewing relationships using diagrams** Relationships between elements are easily created in a diagram using standard relationships defined in the Toolbar.
- **Creating and viewing relationships using the Relationship Matrix** The Relationship Matrix provides a process for viewing or creating links between elements in different packages, independent of them being defined in a diagram.
- **Tracing relationships using the Traceability View** The Traceability window provides a feature for tracing all the relationships of a selected element.

The Relationship Matrix

The Relationship Matrix allows you to create and view relationships, regardless of what diagram or package the elements are placed in. It can be used with any

UML element, but it is particularly useful in Requirements Management for two reasons:

1) With a large system definition it may be cumbersome using diagrams to define large sets of relationships between requirements and other elements. An alternative is to use the Relationship Matrix to quickly set relationships without the need to draw these in a diagram.

2) As the development phase progresses, each element that defines either an Aggregation or Realization of a requirement, such as another requirement or a Use Case, must be linked to its root requirement definition using a connector. It is this linking that is critical to backward traceability. This is where the Relationship matrix can be useful tool for verification of links.

Figure 1 is an example of two related requirements that are in separate packages.

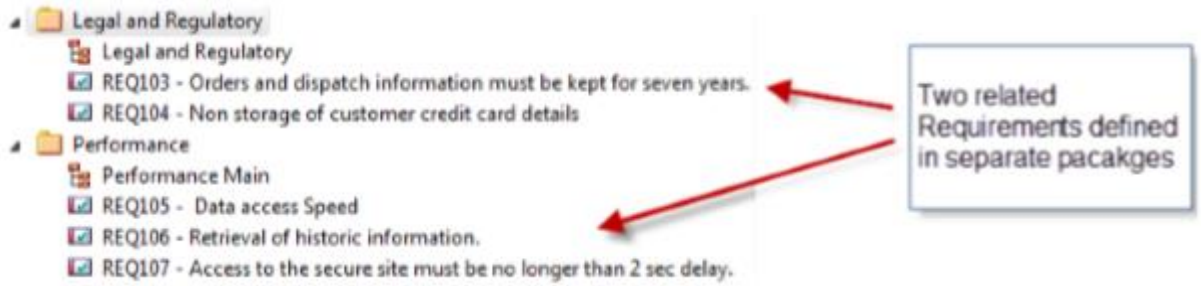


Figure 1: Requirements defined in separate packages

Figure 2 shows the Relationship Matrix view connection between the requirements in Figure 1.

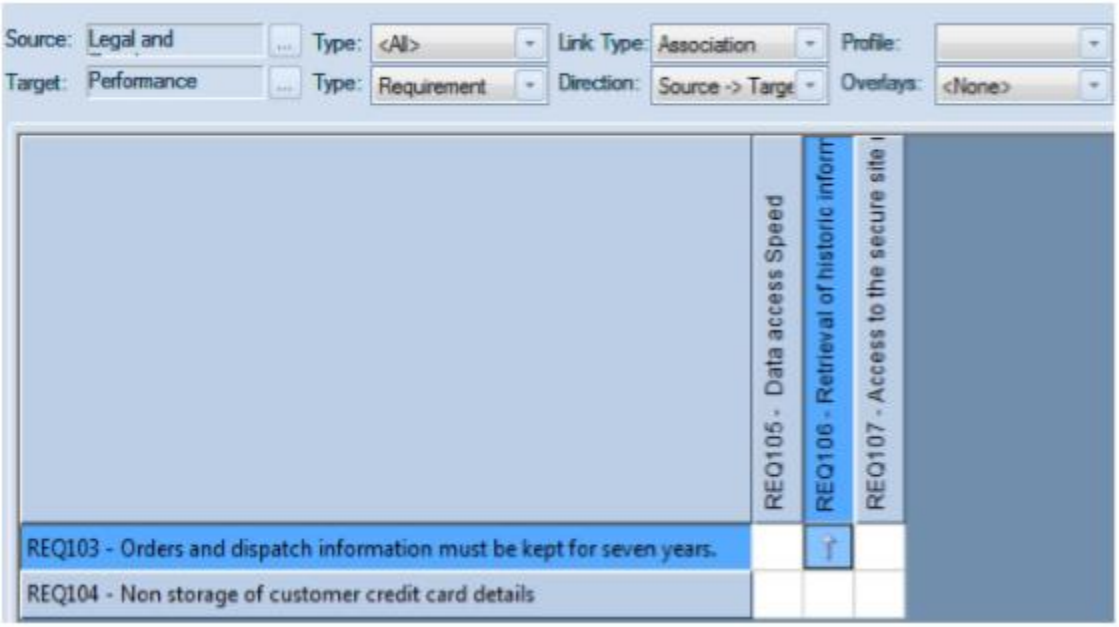


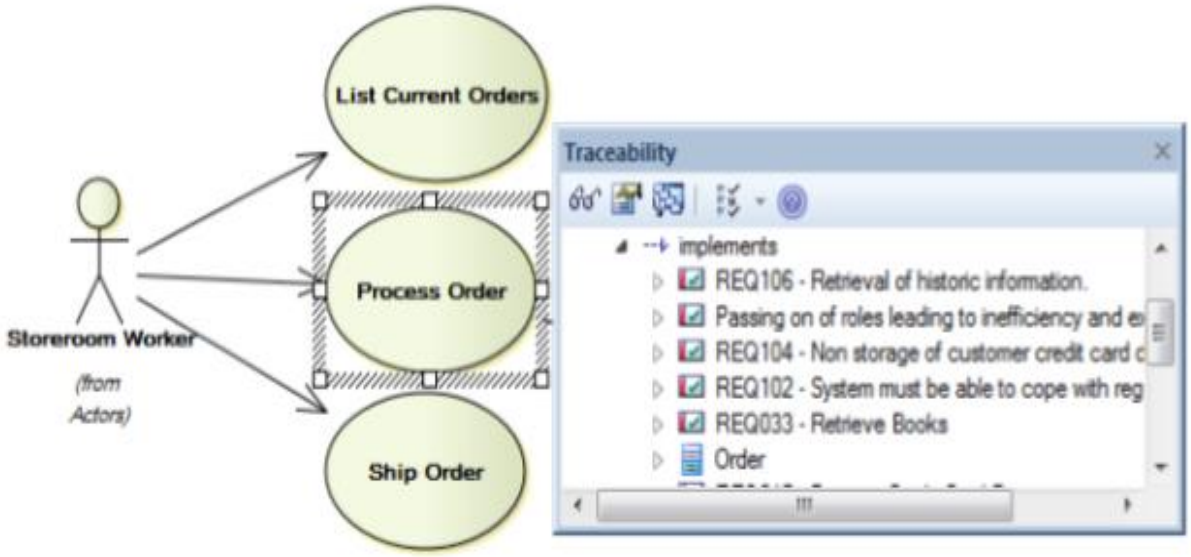
Figure 2: A Relationship Matrix view connections between Elements from different packages

Tips and tricks

- Use the Relationships Matrix to create, edit and delete relationships, rather than doing this graphically in the model diagrams. This is most applicable when crossing different levels of abstraction e.g. from requirements to Use Cases.
- Use the automatic process of creating a relationship using drag-and-drop.

Using the Traceability window

The Traceability window allows you to view the relationships across a hierarchy of elements. It is particularly useful to see the relationships from Requirements to Use Cases, and down through the different levels of UML diagrams. Below is an example of relationships between the Requirements, and the Use Case for 'Processing an Order'.



To use the Traceability window for viewing relationships

- Open the Traceability window (Design > Impact > Traceability or Ctrl+Shift+4).
- Select the element for which you want to display relationships.