Disposition: Resolved

OMG Issue No: 15902

Title: Simplify DI metamodel

Source:

NIST (Mr. Conrad Bock, **conrad.bock@nist.gov**)

Summary:

The DI metamodel can be simplified by removing planes (diagrams can be nested) and leaving packaging out of scope (DiagramCollection, and the association between Diagram and Style).

Resolution:

The DI metamodel is simplified by merging planes and plane elements into diagrams and diagram elements, respectively, and removing labels and diagram collections

Planes are removed. These were to support nested diagrams, but it was decided the additional layer of terminology wasn't necessary, especially when some communities simply call them "nested diagrams". In the revised text, diagrams can be nested. Top level diagrams are those diagrams that happen not to be nested. We discussed various possibilities for modeling this, and settled on treating everything as a nestable diagram element, including diagrams, which are taken as a kind of shape. This means diagrams can have model elements, for example, as in UML composite structure. Top level diagrams won't use bounds. Diagrams can be connected by edges, for diagrams of diagrams.

Labels are removed. The only difference from shapes is they are rendered as strings, which would often be determined by the mapping to DG. Language-specific DI's can define these as kinds of shapes if needed.

It was decided that packaging should be out of scope, because domain languages usually have their own packaging mechanisms, resulting in these changes:

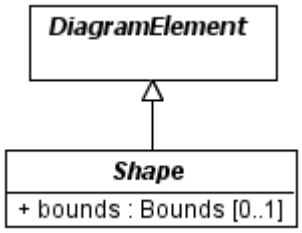
> The existing association between Diagram and Style is removed, because it was only packaging styles, it didn't mean styles applied to the diagram, like the association between DiagramElement and Style, which Diagram now inherits.
>
> DiagramCollection is removed, and its packaging associations to Style.

Packaging of styles is left in Diagram Graphics, because DG is not intended to extend a domain language that might have its own packaging mechanism.

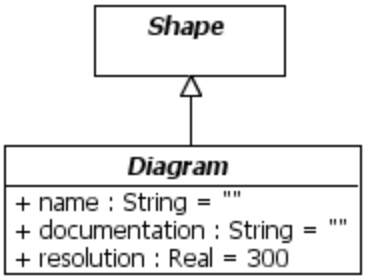
Updates to the Annexes for these changes will be addressed in separate issues.

Revised Text:

Move Figure 9.6 (Shape) to above Figure 9.3 (Diagram), and replace the image with



In the original Figure 9.3 (Diagram), replace the image with



Remove the original Figure 9.4 (Plane).

In the original Figure 9.5 (Edge), caption, replace “PlaneElement” with “DiagramElement”, and change the multiplicity of Edge::waypoint to [*].

In Section 9.3.1 (Diagram)

First sentence

Replace “is a” with “is an abstract”.

Remove “that is rooted with a plane”.

After the first sentence, add a new sentence “Diagrams are diagram elements with an origin point in the x-y coordinate system. Their elements are laid out relative to their origin point.”

Description

Remove the first paragraph.

Second paragraph

Replace the first sentence with “A diagram does not need to be nested.”

Last sentence, remove “by a DiagramCollection element (see section 9.3.2)”.

After the second paragraph, insert the following three paragraphs, adapted from the text removed from Plane and PlaneElement, see below:

“A diagram represents a two dimensional x-y coordinate system that is used to layout nested and inter-connected diagram elements. A diagram has an origin point (0, 0) on the x and y. The coordinate system of a diagram increases along the x-axis from left to right and along the y-axis from top to bottom. All the nested diagram elements are laid out relative to their nesting diagram's origin.

As a kind of diagram element, a diagram may reference a model element from an abstract syntax model, in which case the whole diagram is considered a depiction of that element (e.g. an activity diagram is a depiction of a UML activity). Alternatively, a diagram without such a reference is simply a layout container for its diagram elements (e.g. a class diagram is a container for UML class shapes and edges).

The collection of nested elements in a diagram is ordered and the order specifies the z-order of these diagram elements relative to each other. The higher the z-order, the more to the front (i.e. the more visible) the diagram element is. The z-order of a nested diagram element is higher than the z-order of its nesting element.”

Original third paragraph, first sentence, replace “description” with “documentation”.

Last paragraph

First sentence

remove “a collection of”

At end of the sentence, insert “(see section 9.3.3)” with “9.3.3” updated to the section number for DiagramElement.

Last sentence, replace “diagram elements” with “elements in a diagram”.

Abstract Syntax, first bullet, update figure number for reordering of metamodel figures above.

Before Attributes subsection, insert new subsection with title “Generalizations” containing one bullet before the word “Shape”.

Remove the Associations subsection.

Remove Section 9.3.2 (DiagramCollection).

In 9.3.3 (DiagramElement)

First sentence

Replace “that can be nested in a diagram” with “in diagrams, including diagrams themselves”.

After the first sentence, insert a new sentence “When contained in a diagram, diagram elements are laid out relative to the diagram’s origin.”.

Description

Delete first paragraph.

Next to last paragraph, next to last sentence, replace “or even a diagram collection level” with “, or other diagram elements with nested elements,”.

Abstract Syntax subsection

Replace the text after the second bullet with “Figure 9.6 (Shape)”, with the figure number updated for reordering of metamodel figures above.

Add a third bullet, followed by the text “Figure 9.5 (Edge)” with the figure number updated for reordering of metamodel figures above.

Specializations subsection, replace the text after the first bullet with “Edge”, the text after the second bullet with “Shape”, and remove the third bullet.

Associations

Remove the last sentence in the text after the second bullet.

Remove “?” at the beginning of the text after the third and fourth bullets.

In 9.3.4 (Edge)

First sentence, replace each of the four occurrences of “plane” with “diagram”.

Description

First paragraph, replace each of the four occurrences of “plane” with “diagram”.

Second paragraph, replace the one occurrence of “plane” with “diagram”.

Abstract Syntax, first bullet, update figure number for reordering of metamodel figures above.

Generalizations, replace the text after the bullet with “DiagramElement”.

Attributes, in the text after the bullet

Remove “2..” from between the brackets.

Replace “plane” with “diagram”.

Associations, in both bullets:

After the colon, replace “PlaneElement” with “DiagramElement”

In the text after the hyphen, replace “plane” with “diagram”.

Remove Section 9.3.5 (Label).

Remove 9.3.6 (Plane). Some of its contents is moved to Diagram, see above.

Remove 9.3.7 (PlaneElement). Some of its contents is moved to Diagram, see above.

Section 9.3.8 (Shape)

First sentence, replace each of the two occurrences of “plane” with “diagram”.

Description

First paragraph

Remove the first sentence.

Second sentence, replace “It” with “Shape”.

Abstract Syntax, first bullet, update figure number for reordering of metamodel figures above.

Generalizations, replace text after the bullet with “DiagramElement”.

After Generalizations, insert new subsection titled “Specializations” with one bullet, followed by the text “Diagram”.

Attributes, first bullet, replace “1” with “0..1”.

Section 9.3.9 (Style)

First sentence, at end, insert “, including diagram themselves.”.

Description

First paragraph, first sentence, replace “Style represents a bag” with “A style is a set”.

Second paragraph

First sentence, replace “a diagram collection” with “other diagram elements with nested elements”.

Last sentence, after “concrete style classes” insert “with their own properties”.

Last paragraph, first sentence, after the colon, replace “oif” with “if”.

Abstract Syntax, remove the second bullet.

Disposition: Resolved

Disposition: Duplicate

OMG Issue No: 15994

Title: The Diagram metaclass should be abstract.

Source:

NIST (Mr. Conrad Bock, **conrad.bock@nist.gov**)

Summary:

The other DI classes are abstract.

Resolution:

Agreed that it should be abstract. This is addressed in the resolution to 15902.

Revised Text:

None

Disposition: **Duplicate**

Disposition: Duplicate

OMG Issue No: 15995

Title: Waypoints should be optional.

Source:

IBM (Mr. Maged Elaasar, **melaasar@ca.ibm.com**)

Summary:

Some tools might autoplace edge end points.

Resolution:

Agreed that Edge::waypoints should be optional. This is addressed in the resolution to 15902.

Revised Text:

None

Disposition: **Duplicate**

Disposition: Duplicate

OMG Issue No: 15996

Title: Bounds should be optional.

Source:

IBM (Mr. Maged Elaasar, **melaasar@ca.ibm.com**)

Summary:

For example, as in compartmented property strings.

Resolution:

Agreed that Shape::bounds should be optional. This is addressed in the resolution to 15902.

Revised Text:

None

Disposition: **Duplicate**

Disposition: Closed, no change

OMG Issue No: 15997

Title: Diagram::resolution default

Source:

NIST (Mr. Conrad Bock, **conrad.bock@nist.gov**)

Summary:

The default for Diagram::resolution should be shown in the metamodel figures.

Resolution:

It is shown in Figure 9.3 (Diagram).

Revised Text:

None

Disposition: **Closed, no change**